The Coloured Atlas of Medicinal and Aromatic Plants of Jordan and Their Uses (Volume One)

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By

Jamal Ragheb Said Qasem

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DEDICATION

- In the name of God, who created, invented and sustained all these wonderful, valuable, diverse plant species, His mercy and His blessing, and who said "We will show them our signs in the horizons and within themselves until it becomes clear to them that it is the truth. But is it not sufficient concerning your Lord that He is, over all things, a Witness?" (Sura Fussilat 041-053).
- To my homeland and to all who bless its soil.
- To the memory of my parents, who made sacrifices for my education and taught me that the land is faith and life.
- To all my grandchildren, to learn and to know the value of the source and the product.

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PREFACE

Authoring a reference book on an important subject utilized daily by the public, traders, readers and researchers is not an easy task in the absence of well-planned and well-conducted academic research and real scientific information. A huge number of reference books and an overwhelming amount of articles on medicinal and aromatic plants are available in local markets, bookshops, libraries, and many herbal stores and shops specializing in folk medicine trades and preparing, formulating and selling these plants or their materials; some are of an acceptable history and accumulated experience while others are recently founded and have little or no experience but are rather invested in this field. All these sources mentioned, in addition to the public's inherited experience on the utilization of these plants in folk medicine, herbalism and traditional herb practices and their knowledge on plant-based medications that have been passed down from one family to another within communities, have created a great demand for knowledge on these species' use in medication. However, many of the available reference works have been gathered, compiled or prepared by non-specialists, which casts some doubt on their information, which may negatively add to our knowledge or even be confusing. In addition, many authors, researchers or project leaders in this field of science are either not specialists or are unfamiliar with medicinal and aromatic plants, and thus their results and reports may lead to random public use of these species in folk medicine, which could result in permanent illness or death.

Aromatic and medicinal plants are renewable resources for drugs, the medicinal industry, cosmetics, perfume and pesticides. Many species are toxic if used fresh or in crude forms, or may be so at a certain stage or under specific conditions. Others are extremely poisonous when internally taken, used in high doses, or when repeatedly applied or utilized for a long period. Some are also effective for curing local inhabitants but are not so for foreigners, hence the statement of Hippocrates that one should "treat or cure each patient by plants of his own land which are most appropriate to restore his health and recovery from illness". The active constituents of these plants are not produced or synthesized, but are only available under certain conditions or at a certain time of the day, season or year and only in certain plant part/s.

As an author, agriculturalist, weed science specialist, lecturer on medicinal and aromatic plants, and researcher, I have reviewed the literature and gathered exact and correct information on these important species in drugs and in the industry, as reported and confirmed by different authors. However, many of the reported species in this book have not been fully researched or studied and their active constituents are still unknown. I should indicate that I am not the author who examined or proved species' effectiveness and their safe use against the illnesses and diseases reported in this book. Therefore, self-medication using these species or in folk medicine is the responsibility of the user, who should always seek medical advice from a specialized practitioner. The book is an important source of scientific information, but is certainly not a guide for self-medication. It emphasizes wild grown species, which hence are unfamiliar to the public; many cause health difficulties if misused but are important for investment and the ecosystem. However, with the world's increasing interest in natural products and herbalism, medicinal and aromatic species gain priority as renewable resources for such natural chemicals, and more research and development is needed.

Finally, I do not claim that the species reported are all that occur in Jordan's flora, especially in the absence of actual academic research or survey studies. I should indicate that many species occurring in local habitats lack basic information with regard to their biology, ecology and importance, and are only listed as wild species of an unknown value or as common weeds. However, this atlas introduces 769 plant species (209 are cultivated and 560 are wild grown) occurring in Jordan belonging to 119 plant families, and all are listed with necessary information. The atlas presents a full colour photo for each species for readers to become acquainted with the species presented and shows their values to the national economy and environment.

Jamal R. Qasem

ACKNOWLEDGEMENTS

First, thanks to God for completing this reference book and making it into a reality for the scientific community, students, researchers and interested public readers in this important branch of science. Creation, health, toxicity, wellness, sickness, recovery, drugs and cures all are from and by God, and must lead any who deeply think on creation to become a believer. The Holy Qur'an says, "Those who remember Allah while standing or sitting or [lying] on their sides and reflect on the creation of the heavens and the earth [and say] "Our Lord, You did not create this aimlessly; exalted are You [above such a thing]; protect us then from the punishment of the Fire"" (Ali-Imran 003-191). I would like to express my gratitude to the Deanship of Academic Research at the University of Jordan for approving and funding this project. I also thank Miss Hadeel Bdair and Mrs. Dina Al-Hattab for their part-time technical assistance during the early preparation phase of this project; thanks are also extended to Mr. Madi Al-Abbadi for joining me on field trips, Mr. Alex Monaghan for proof-reading the manuscript and the Cambridge Scholars Publishing family for printing and publishing the book. Thanks to my wife and sons who supported and encouraged me throughout the whole period. Finally, to all friends and colleagues who encouraged me to complete this project and highly valued its importance, I say thanks, and to others who thought its completion would not be an easy task, or even an impossible one, I say your feelings were behind my persistence and insistence to complete this work. Having realized the merits of its publication, I offer it to all who are homesick and in love with scientific research, who devote their lives to their homelands, and who believe in history and originality.

INTRODUCTION

The history of utilizing plants for their healing properties is as old as man himself. The first man on earth was searching for plants that would fulfil his needs of food, shelter, medicine and beauty then, later, as feed for his animals. He recognized useful plants, and protected and increased their number, productivity and/or the area they occupied, while other plants of unknown values or which were poisonous were ignored or severely controlled. However, in the absence of historical documentation on the exact date, the grave of a Neanderthal man buried 60,000 years ago reveals that the connection between plants and human health has existed for thousands of years. Such a link has also been confirmed through the drawings on graves of Ancient Egyptians and documented in medical hieratic papyri. Mesopotamian prescriptions and the medicinal substances of the Babylonians and Sumerians are available from the era of Hammurabi's laws on plants' uses in medication with full details on diseases, plants' doses, formulations and the time at which these were used. Some species, however, were also found to have grown in biblical gardens. The great historical documents on medicinal plants' uses in human medication have also been found in China, Greece, India and some European countries. However, many of the plant species used in history for healing certain ailments or against certain diseases have also proved effective against the same diseases in modern medicine; some formulations have been changed, while others are still used as they were when they were first prescribed.

Plants are a renewable resource for human drugs and veterinary medicine. Medicinal and aromatic plants represent a significant component of the natural ecosystem and agro-ecosystems, play an important role in industry and add significantly to a nation's economy. Many are used as drugs and drug additives in perfumes, cosmetics, food, flavouring agents and spices or as a source of natural pesticides. With the trend towards rapid urbanization, people became more concerned about their food, drinks, drugs and environment, and more interested in a safe habitat, a clean environment, a hazard-free life and their welfare. Although many countries have traditionally adopted a natural system for their food and drug production, and folk medicine is widely practised, others are more restricted and dependent on synthetic or manufactured materials as a main source of food and products. However, with better awareness of the problems that the second system created for human health and the environment, natural products became more attractive for health, industry, and investment in food and drugs, and thus more attention is given to protecting the natural ecosystem. In this context, using natural resources and organic food production in the drug industry is highly respected. Considering the above-mentioned reasons, and the possible risk in using synthetic drugs and other chemicals on human health and the environment, people worldwide have turned back to nature's chemicals. While 400,000 chemical compounds are estimated to occur in plants, only 10,000 have been isolated and identified as secondary metabolites of different uses. This huge number of plants' natural chemicals could greatly serve and fulfil humanitarian needs in all fields.

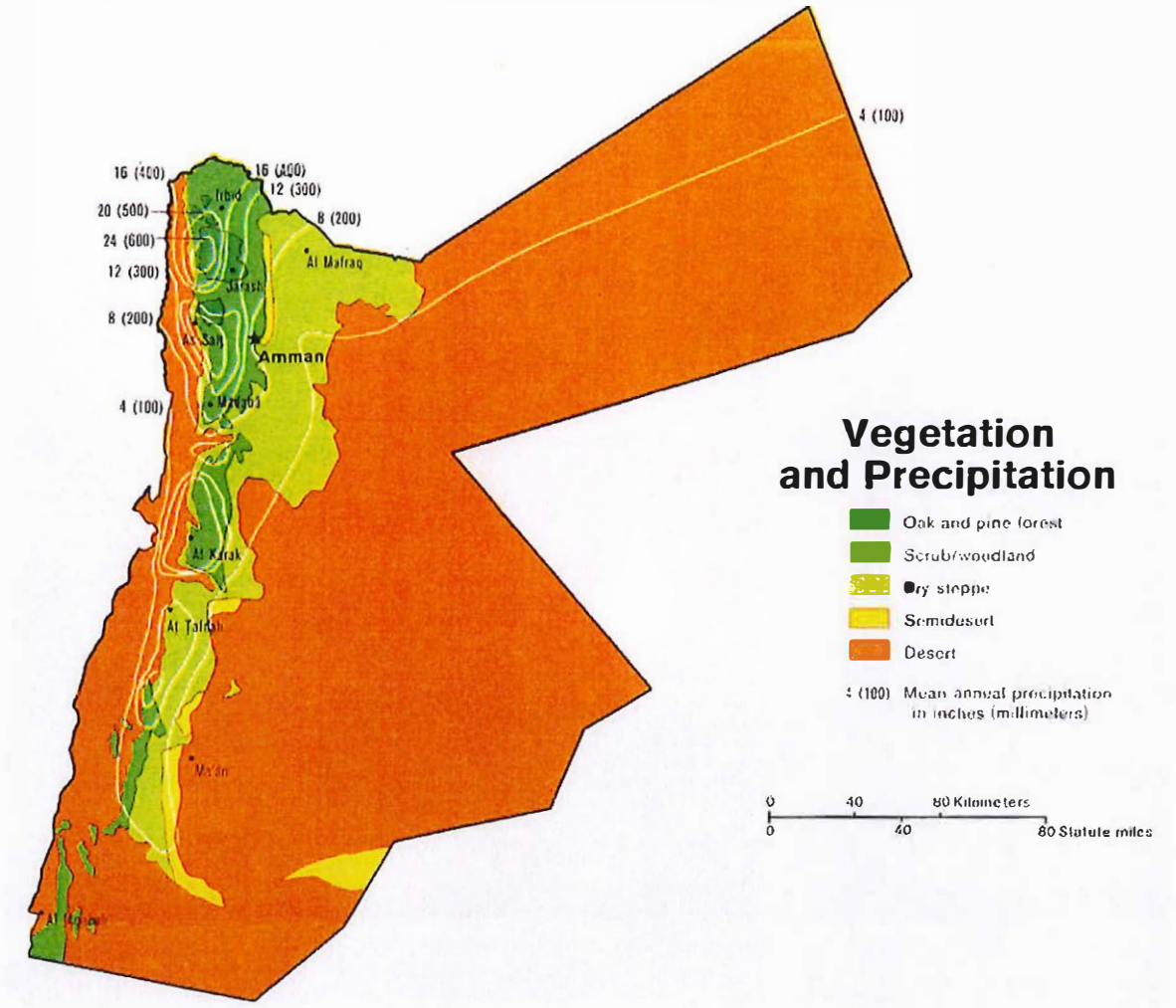
In Jordan, almost 2,500 plant species have been reported to occur in the country, accounting for about 1% of the total number of plant species known in the world. Among these, 350 to 500 are regarded as useful in medicine and cures, and many of these are also used in food and for other purposes. The main issue is the absence of a drug industry and the complete reliance on imported chemical drugs and pesticides. This declined levels of interest in these species and investment in their production. In addition, harvesting, heavy grazing, war, drought, salinity, low rainfall and housing construction have created unfavourable conditions for the plant population's expansion in natural habitats and/or their cultivation. All have contributed to placing many plants in endangered or threatened categories despite the diverse environmental conditions, extending from tropical and sub-tropical to the Sahara-Arabian, that create ideal environments for a wide diversity of such species or others in the country.

The present book is divided into three volumes: the first is devoted to cultivated plant species while the second and the third cover wild grown species. Plants are arranged alphabetically based on their scientific names, regardless of other factors. It is a reference book that includes basic information on medicinal and aromatic species in Jordanian flora, emphasizing their importance in the drug industry and the natural ecosystem. It is of value for the general public, folk medicine practitioners and the drug and chemical industry. The scientific merit of this publication is clear for certain university departments, including medicine, pharmaceutical, scientific and agricultural faculties.

I have full faith in the work and hope that the book highlights a number of medicinal and aromatic plant species in Jordan and provides interested people with useful knowledge on each. Finally, thanks to the Lord who greatly helped me in finding, identifying, directing and finishing this work and, above all, who created these beautiful plants that maintain their secret curing recipes for many difficult human and veterinary diseases that specialists have no solution for and which are only stored in these peaceful, sensitive, and sometimes endangered or threatened plants. The book emphasizes wild species unfamiliar to the public that have been ignored or severely prevented from sowing their seeds or producing propagules to maintain their genetic lines and exist in nature. Thanks to the creature that organized and managed the life of all living organisms to exist and have strong ties to fulfil the needs of all. Man does not know all

benefits of plants; many are still hidden and are only discovered through research, and therefore each species may be regarded as a natural pharmacy that includes all drugs necessary for humans. Each species has some sort of beauty and it is our goal to search for and discover them. However, man, who we started with, is himself responsible for the eradication, killing and disappearance of these species in his habitat, which should have instead been protected, increased and developed.

The author



Map of Jordan showing the country's biogeographical regions and vegetation types (source: lib.utexas.edu)

With each sunrise, a new day starts that brings a huge amount of knowledge for those who want to learn.

VOLUME ONE

CULTIVATED MEDICINAL AND AROMATIC PLANTS OF JORDAN

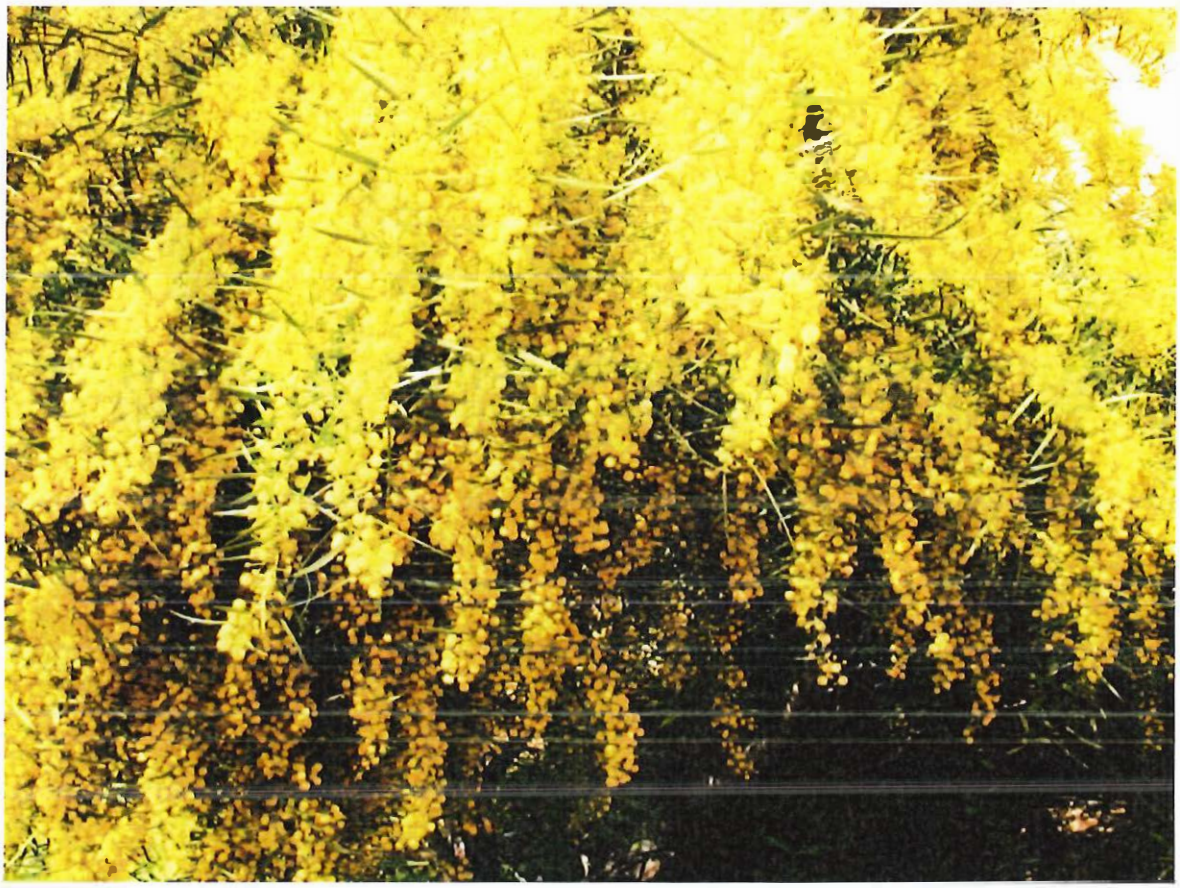
- **Arabic name**: Bamia, Bamia'a
- **Scientific name**: *Abelmoschus esculentus* (L.) Moench
- **Common name**: Okra
- **Family name**: Malvaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Fruits
- **Chemical constituents**: Mucilage, carbohydrates 8.3%, protein 2%, ash 1.1%, fat 0.2%, fibres 1.4%, mineral elements including calcium and magnesium, and vitamins A, C, and B_6.
- **Pharmacological action**: The fruits are nutritive, anti-diabetic, anti-oxidant and anti-bacterial. Mucilage is used as a suspending agent in drugs, especially in paracetamol.
  In folk medicine, a fruit infusion is taken to reduce blood sugar level in diabetics. A decoction of small fruits treats inflamed mucus tissues, mainly of the respiratory system, associated with severe secretions. Okra juice cures throat and pharynx ulcerations associated with coughing. Fruits and leaves decoctions are used for urinary system troubles such as urination ailments and other problems including syphilis and gonorrhoea. Leaves and roots cure cuts. Okra juice is effective against diarrhoea, fever, intestinal ailments, and itching, and is a skin emollient. Leaves are used for inflammations and fruits are eaten for strong seminal secretions. Roasted seeds are diaphoretic and used in protecting against muscle spasms. Okra decoctions are used to treat fevers, headaches and arthritis. Since okra is rich in fibres, it absorbs moisture and improves deposition and thus is effective as an anti-diarrhoeal and anti-constipation. Mucilage binds with cholesterol and gallbladder acids and is disposed of with faeces. Okra acts by preventing sugar absorption by the intestines and thus reduces its blood level. Mucilage is a laxative and facilitates the deposition of waste materials. It is believed that okra is an emollient, preventing boils, sores, acne and skin ruptures.
- **Other uses**: It is a vegetable crop, and the fruits are cooked in different forms and eaten. Stem fibres and fruits are used in the paper and fabric industries. Okra seeds are substituted for coffee beans.
- **Caution**: Okra causes stomach debility or weariness for some people and vomiting. It has been reported that methanolic extracts of okra fruits constricted the sexual systems of mice, and histological studies showed a reduction in prostate gland weight in male mice, indicating the harmful effect on mice's fertility.

Okra field

Okra fruits

Cones

- **Arabic name**: Tanoob, Shooh
- **Scientific name**: *Abies cilicica* Ant.et. ky.
- **Common name**: Cilician Fir
- **Family name**: Pinaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Essential oil and terminal portions of young leafy branches.
- **Chemical constituents**: Volatile oil (3%) as a source of industrial camphor, borneol citrate, camphen, alpha-pinene, beta-pinene, dipentene and santene. Leaves contain terpenes, vitamin C and a fixed oil. Seeds contain vitamin E.
- **Pharmacological action**: Oil inhalation is a cure for throat catarrh. Camphor is used for psychological diseases, as a sedative, and improves and stimulates cardiac functions. Externally, the herb is used as an anti-rheumatic and anti-arthritic. Terpene is a skin irritant, stimulates the blood cycle, is an antiseptic, expectorant, and nerve tonic, and is useful in curing gout and rheumatism. The decoctions of young leaves and buds are anti-scorbutic.
- **Other uses**: It is a perfume and a fresh spicy scent. It provides a festive aroma for a freshly cut Christmas tree.
- **Caution**: It can be a skin irritant and causes arthritis if its perfume is undiluted.

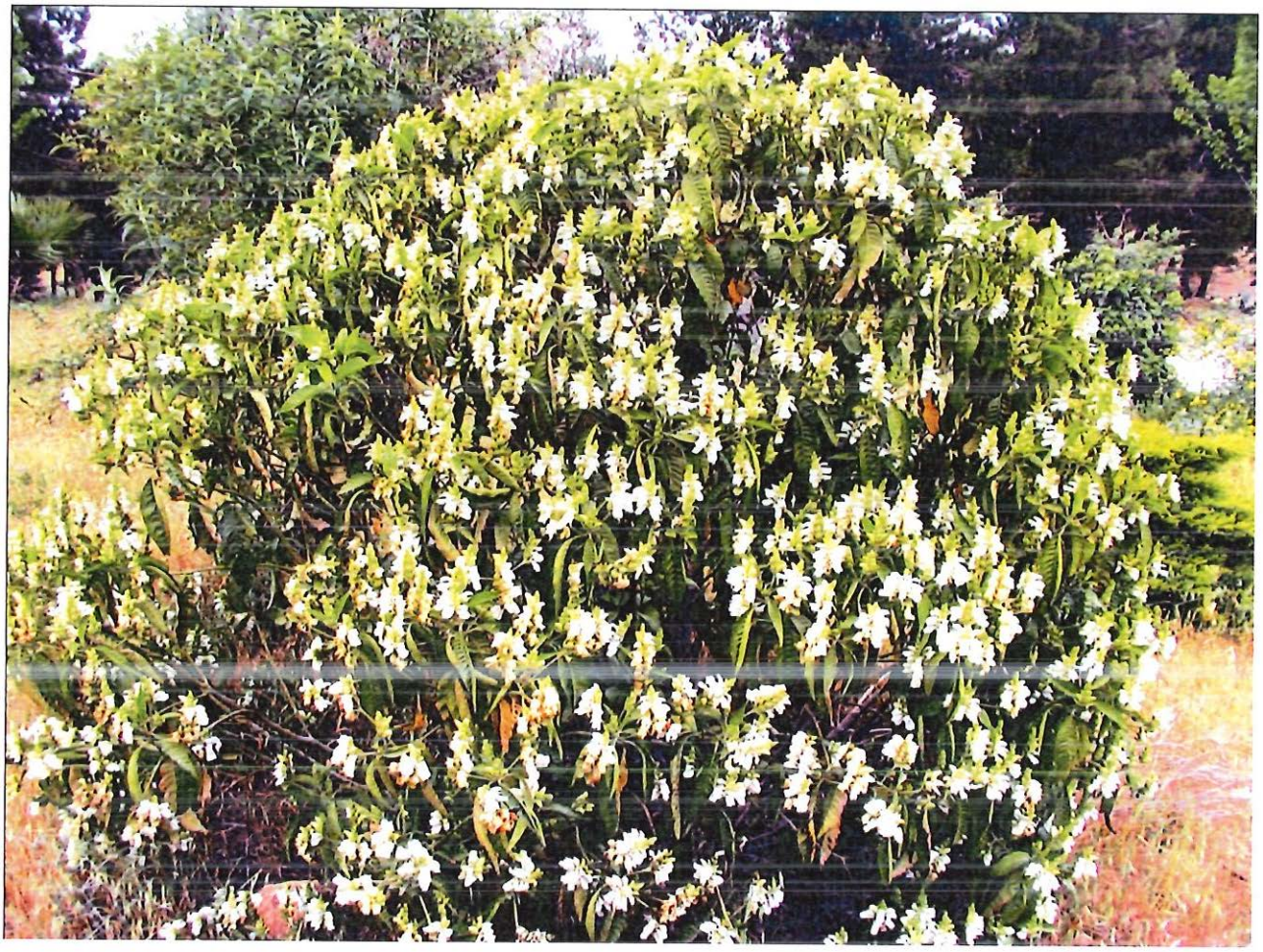


- **Arabic name**: Acacia
- **Scientific name**: *Acacia cyanophylla* Lindl.
- **Common name**: Blue-Leaved Wattle
- **Family name**: Leguminosae / Fabaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Leaves, flowers, pods, and bark.
- **Chemical constituents**: Flavonoids such as quercetin and kaempferol, flavonols, phenolic compounds in leaves including gallic, protocatioic, chlorogenic, p. hydroxybenzoic, p-coumaric, syringic, and vanillic acids. In flowers, quercetin, isosalipurposide, and naringenin. Tannin in the bark. Leaves consist of spirostane saponin and biflavonoid glycosides. The plant contains volatile oils and gum. *Acacia* has also been reported as rich in phytochemicals such as cardiac glycosides, cylitols, amines, alkaloids, fatty acids, terpenes, hydrolysable and condensed tannins, non-protein amino acids, fluoroacetate and phytosterols. However the presence of certain phytochemical contents such as glucosinolates, naphthoquinones, coumarins, anthraquinones, lignans, acetylenes, stilbenes and atypical fatty acids are reported to be less within the *Acacia* genus as well other mimosoid legumes.
- **Pharmacological action**: The leaf extract has antioxidant and anti-acetylcholinesterase activity. Similarly to many other plant species belonging to the same genus, it has medicinal values in cases of gonorrhoea, dysentery and bloody diarrhoea. The saponin and biflavonoid glycosides are cytotoxic.
- **Other uses**: The flowers are cooked since they are rich in pollen grains. A strong acidic gum released from the bark seems to have potential uses in food, pickles and other food stuffs requiring a sour taste. A yellow pigment is obtained from the flowers and a green one from the pods. The plant is grown in gardens as an ornamental and in loose-soiled hills against soil erosion. It is also grown on field borders as a wind breaker, and can also be used for the rehabilitation of dry and semi-arid regions. It is used as fuel.
- **Caution**: No reports.

- **Arabic name**: Anbar, Fittna, Acacia
- **Scientific name**: *Acacia farnesiana* (L.) Wild
- **Common name**: Sweet Acacia, Popinac, Sponge Tree, Needle Bush
- **Family name**: Leguminosae / Fabaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Flowers and fruits.
- **Chemical constituents**: The acacia essential oil consists of farnesol, geraniol, and linalool. Pods contain tannins. The plant has saponins, coumarins, carbohydrates and/or glycosides, unsaturated sterols and/or triterpenes, mucilage, alkaloids, nitrogenous bases, flavonoids and cyanogenic compounds. It also consists of phenols and is regarded as a source of pentosans and furfural. Seeds contain diterpene glycoside. The pods yield kaempferol 7-glucoside, kaempferol 7-galloyl glucose and polyphenols identified as Et gallate, Me gallate, gallic acid, m-digallic acid, catechol, ellagic acid, lipid, aromadendrin, and maringenin. Leaves have a high content of cholesterol in lipids.
- **Pharmacological action**: Flavonoids and flavones are used for the prevention and treatment of cognitive decline, age-related memory impairments and skin diseases. The plant is active against one or more sarafotoxins in snake venom. The pod's extract has hypoglycaemic activity. The ointment made from pods is used for eczema and skin profligacy between toes. The oil is used in perfumery and for rheumatic symptoms and chest ailments. Leaves treat skin diseases. Bark and leaf extracts are used for malaria and roots and bark for diarrhoea and skin diseases.
- **Other uses**: It is used for colour firmness and stability in the dyeing of cotton textiles, and the flower oil is used in fragrances of different types. The plant is an aromatic and industrial species, and is also used as a fence on farms and as an ornamental.
- **Caution**: No reports.

The whole plant

- **Arabic name**: Adhatoda
- **Scientific name**: *Adhatoda vasica* Nees
- **Common name**: Malabar Nut
- **Family name**: Acanthaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Leaves, roots, flowers, and fruits.
- **Chemical constituents**: Alkaloids and an unknown volatile oil. Mature leaves are rich in carotene and vitamin C.
- **Pharmacological action**: The plant is a cure for chest problems, bronchitis, malaria, tuberculosis and as a vermifuge. The leaves are used for rheumatism.
- **Other uses**: It is an ornamental plant in gardens and along pavements. It has insecticidal activity.
- **Caution**: The plant is not suitable for use by pregnant women.



The whole plant

- **Arabic name**: Kastana'a Al-Hussan
- **Scientific name**: *Aesculus hippocastanum* L.
- **Common name**: Horse Chestnut
- **Family name**: Hippocastanaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Roots, flowers, seeds, bark, and fruits.
- **Chemical constituents**: Saponins, tannins, antidote substances, anti-inflammatories, alkaloids, and glycosides, among which aesculin is the most toxic.
- **Pharmacological action**: It is an anti-inflammatory, anti-tumour, anti-astringent and anticoagulant. Seed preparations are used for haemorrhoids, varicose veins and, externally, as an ointment added to bathwater.
- **Other uses**: The plant is used as an ornamental tree on streets.
- **Caution**: Fruits (nuts) are toxic, and therefore should be removed when the plant is used in large quantities in medication.

- **Arabic name**: Agave Amreeki, Agave
- **Scientific name**: *Agava americana* L.
- **Common name**: Sisal, Agave, Century Plant
- **Family name:** Agavaceae or Amaryllidaceae or Asparagaceae
- **Growth habit**: Succulent plant
- **Life cycle**: Perennial
- **Part/s used**: All plant parts, leaves, roots, and plant sap.
- **Chemical constituents**: Glycosides, agavosides A, B, and C, steroidal saponins, spirostanol, agavesaponin C and agavesaponin D, sapogenin, saponins, hecogenin, and steroidal hormones.
- **Pharmacological action**: The plant is used as a traditional herbal remedy, which is only prepared from the sap. It is a demulcent, laxative and antiseptic. It is diuretic and emmenagogue. It is also used as an anti-scorbutic; the extracted substance from certain species can be transformed into cortisone.
- **Other uses**: Plants' raw materials are used in manufacturing packaging or paper boxes. The plant is an ornamental.
- **Caution**: Eating the plant may cause some minor symptoms such as rashes, vomiting or diarrhoea. The ingestion of small amounts may not cause any symptoms. Exposure to the plant's juice or sap or a puncture wound from the thorns may produce a skin rash or irritation. Skin wounds from some of these plants can be extremely painful, causing large blisters and skin burning.

- **Arabic name**: Agave
- **Scientific name**: *Agava sisal* L.
- **Common name**: Sisal, Agave
- **Family name**: Agavaceae or Amaryllidaceae or Asparagaceae
- **Growth habit**: Succulent
- **Life cycle**: Perennial
- **Part/s used**: Leaves, roots, and leaf sap.
- **Chemical constituents**: Plant leaves contain protein, fibre, ash, fats, carbohydrates, sapogenins, steroidal sapogenins and sapogen materials including tigogenin, Ne-tigogenin and hecogenin. In addition, agave contains Ne-tigogenin, sisalogenin, gloriogenin, gentrogenin, yamogenin and diosgenin. It also contains vitamins A, B_1, C, D, K, anordin materials and dinordin of sterility, and has anti-fertility and anti-conception effects.
- **Pharmacological action**: The plant is a source of cortisone and steroidal hormones. It is an antiseptic, diuretic, laxative, wound-healing, anti-inflammatory, anti-fever, digestive, anti-constipation and anti-dysenteric. The plant extract has antimicrobial and antibacterial activities that harm the digestive system. It was previously used to treat syphilis, tuberculosis, and liver diseases, and it helps protect against scorbutic disease. It is used externally to cure burns. The infusion of agave fibre prevents head skin infections and alopecia. Prosteroidal hormones extracted from plant leaves are the core unit of cortisone and carry its properties. The plant has anti-arthritic activity and cytotoxic properties. It is also used for gout, rheumatism and as a demulcent.
- **Other uses**: The plant is used to prepare a special Mexican drink. It is also used as an ornamental plant in homes and public gardens.
- **Caution**: Ingesting the plant may cause some minor symptoms such as rashes, vomiting or diarrhoea. Small amounts may not cause any symptoms. Exposure to the plant's juice or sap may produce a skin rash or irritation. Skin wounds from some of these plants can be extremely painful, causing large blisters and skin burning. The plant should never be used by diabetics or hypertensive patients. Its formulations should be only used under medical supervision and when necessary, especially by women before and during pregnancy. It should not be used by growing children.

- **Arabic name**: Lisan Al-Teer, Shajarat Al-Janah, Shajarat Al-Sama, Shajarat Allah
- **Scientific name**: *Ailanthus altissima* (Mill.) Swingle
- **Common name**: Tree of Heaven
- **Family name**: Simaroubaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Bark and root.
- **Chemical constituents**: Ailanthone, ailanthonon, quassin, ailanthinone, chaparrine, and ailanthinol B (quassinoid derivatives), the alkaloid 1-methoxycanthin-6-one is not active, indole alkaloids with canthine-6-one and beta-carboline structures, alkaloids, tannic acid, and resin.
- **Pharmacological action**: The plant is a tonic, anthelmintic, antiseptic, purgative and cardiotonic. It acts as an anti-malarial, anticancer, anti-dysentery and anti-diarrhoeal. The bark is used for worms, gonorrhoea, asthma and as an anticonvulsant. Infusions from the leaves and bark are used against intestinal parasites and the powder of dry leaves is used to treat haemorrhages.
- **Other uses**: The plant's bark extract is strongly phytotoxic and contains ailanthone as one of the major herbicidal compounds, with strong herbicidal effects in the field. There is a possible use of root extracts or active plant constituents as natural herbicides. It is a street tree plant. Resin oil is used in industry and for making certain types of varnish.
- **Caution**: The plant should never be used in medication except under medical supervision.

Flowering branch

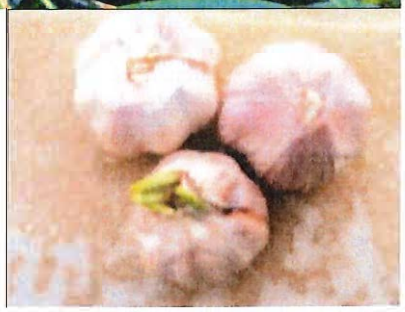
Plant with different flower colours

- **Arabic name**: Bassal
- **Scientific name**: *Allium cepa* L.
- **Common name**: Onion
- **Family name:** Liliaceae / Alliaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used:** Fresh bulbs, stem and extract
- **Chemical constituents**: Phenols, alkaloids containing sulfur, vitamins A, B_1, B_2, and C, and mineral elements including iron, sodium, calcium, phosphorus, and magnesium. It consists of essential oil, alpha-thiosulfanic acid, disulphide allyl propyl, thiopropionic aldehyde, thiosulfuric acid, thiopropionic aldehyde, glycosides, glycogenin, proteins, carbohydrates, cellulose fibres, pyruvic acid, and flavonoids including quercetin, sugars and plant hormones. It also contains volatile oils.
- **Pharmacological action**: The plant is used for coughs, deafness, ear infections, malarial fever, heart diseases, phlegm, skin problems and stomach cramps. It improves vision and is used for asthma, colds, eye infections, helminthiasis and skin abscesses, and cures rheumatic arthritis. It is antiseptic, antioxidant, cataplasm, anti-inflammatory, carminative, appetitic, anti-cholesterol, anti-diabetic, and anticancer. It is beneficial for women who are at increased risk of osteoporosis and who are going through the menopause by destroying osteoclasts. The plant alleviates or prevents sore throats. Raw onion is helpful in reducing swelling from bee stings. Pyruvic acid inhibits the generation of organic free radicals and quenches pre-formed free radicals. A regular consumption of onion reduces high cholesterol levels and hypertension and consequently prevents arteriosclerosis. Quercetin, as an antioxidant, reduces the size and number of precancerous lesions in the human stomach. Onions reduce bone brittleness and weakness.
  In folk medicine, onions are used for hayfever and snivels. Their juice, used with bees' honey in equal portions, cures cut ends, glaucoma and sedates ailments. Macerated onion slices are used as an anthelmintic in babies and at-home medicine for acne. Onions increase fertility and can be used to cure piles if used as a pessaries decoction. Onion poultices can also be used to cure whooping cough. Onion oil is used for influenza, fertility, cholesterol, diabetes, sedative, nerve system, as an antiseptic, and for hair beauty and care.
- **Other uses**: It is a vegetable crop, used as a flavouring agent and appetizer in food.

❖ **Caution**: The overconsumption of onions may result in anaemia, and therefore the amount regularly taken should not exceed two small bulbs per day per individual. A peeled bulb should not be kept exposed to the air since it becomes toxic. Cooking the onion leads to high losses in its nutritional value.

Onion field

- **Arabic name**: Leek, Kurath
- **Scientific name**: *Allium porrum* L.
- **Common name**: Leek, Prason.
- **Family name:** Liliaceae / Alliaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: Leaves and leaf bases, and stem.
- **Chemical constituents**: The plant is rich in minerals including potassium, iron, manganese, phosphorus, calcium, magnesium and sulfur salts. In addition, it contains vitamins B and C, and mucilage. Leek oil consists of sulphide, methylene, dibenzofurans, sapogenins, saponins, proteins, sugar and oil.
- **Pharmacological action**: The plant is anthelmintic, anti-cough, anti-asthmatic, anti-cholesterolemic, antiseptic, antispasmodic, anti-rheumatic, stomachic, cholagogue, diaphoretic, diuretic, febrifuge, a heart stimulant, tonic, and vasodilator. It has cytotoxic and anti-proliferative activity. Dibenzofurans have antifungal activity. Leeks are effective against kidney ailments, calcification, chilblains, chapped hands, stings, and sore eyes. It is an expectorant, nutritive and contains sulfur. It cures hoarseness, and acts against infections of the digestive system. It is also used for anaemia, indigestion and is a nerve tonic. Roots are peeled, macerated and taken with milk for worms. A leaf decoction is an antiseptic, wound disinfectant and healer.
- **Other uses**: It is a vegetable crop, a very popular food and is widely used, mainly in soup.
- **Caution**: No reports.



Bulblets

- **Arabic name**: Thoom
- **Scientific name**: *Allium sativum* L.
- **Common name**: Garlic
- **Family name:** Liliaceae / Alliaceae
- **Growth habit:** Herb
- **Life cycle**: Perennial
- **Part/s used**: Bulblets, sometimes seeds, and leaves.
- **Chemical constituents**: Bulblets contain 0.1-0.36% of the volatile ether oil biokatalysatoran alkyl sulphide. Essential oil is mainly made from a mixture of sulfur derivatives, the alliin that transforms in the presence of the alliinase enzyme into an unstable compound with a distinct smell called allicin. When it comes in contact with air and water, allicin converts into diallyl sulphide. Almost 50% of the alliin readily converts into sulfur dioxide allyl within two minutes of exposure. These enzymes can be arrested by placing bulblets in alcohol. Bulblets also contain vitamins A, B and C, thiocyanine compounds such as garlicin, allicin, sugars, salts of many minerals and compounds of hormonal properties. The flavonoid quercetin and its glycosides showed the highest antioxidant activity. The main components of garlic include diallyl sulphide, diallyl disulphide, diallyl trisulphide, ajoene, alliumin and protein.
  The strong smell of garlic is due to the presence of sulfur compounds, especially allicin, alliin and ajuin. Garlic contains enzymes and semi-hormonal compounds similar to sexual hormones.
- **Pharmacological action**: Garlic extract mixture is a component of hair-growth stimulant compounds. It is an antioxidant, anti-hypertensive, anti-alopecia, antifungal, antitoxic, aphrodisiac and depurative. It is used for colds, coughs, cutaneous infections, hair care, headaches, helminthiasis, intestinal pains and sterility. Garlic enhances digestion, and has anti-cholesterol effects. Roots are anti-fermentation, vermifuge, antibacterial, and antibiotic, and are used for lung affections and stomachics. Garlic is hypoglycaemic, a urinary antiseptic, cholagogue, antidote poison and choleretic. It is used to treat arteriosclerosis, abdominal pain and colic, dandruff, diarrhoea, ophthalmia, flatulence, kidney problems, memory feebleness, tuberculosis, thorns,

snakebites, and wounds, and helps prevent cardiac diseases including atherosclerosis. It prevents certain types of cancer, such as stomach and colon cancer. It is also alleged to help regulate blood sugar levels and has been used as an antiseptic, effective in preventing scurvy, due to its high vitamin C content. Garlic has been used reasonably successfully in AIDS patients to treat cryptosporidium and toxoplasmosis, and another protozoa disease. It has antimicrobial properties because of the allicin, and it affects the apoptosis of several tumour cells with anti-proliferative activities. The agent provides a partial or complete recovery of hair at different stages of alopecia due to its anti-oxidative capacity. Dietary garlic supplementation may be beneficial in decreasing oxidative stress. Garlic flesh and peel are effective in lowering lipid levels of the liver and plasma. A flesh ethanol extract diet is most effective in anti-thrombogenic activity. Garlic is used as an appetizer that stimulates duct bile, and acts as a tonic and vasodilator. Its oil protects cardiac muscle tissue and strengthens it. It is a diuretic and reduces blood coagulation because of sulfur derivatives that affect the coagulant enzyme. Garlic is an expectorant, carminative, and an antiseptic for the respiratory system. Garlic oil is supportive for the immune system and is usually used as a protective agent that prevents respiratory system problems. Garlic is considered as a natural antibiotic, is useful for asthma and whooping coughs, and is good for colon infections. Externally, it is used for insect stings, acne, and inflamed boils on hands and feet. Seeds improve stomach disorders, help prevent vomiting, act as an oil cardiotonic and reduce cholesterol levels. It is a successful cardiac drug and aids cardiovascular problems. Garlic is an antibiotic that kills microbes including fungus, viruses, and parasitic worms. It is effective against the AIDS virus, and reduces its activity and spread. Garlic protects against influenza and its symptoms. It also enhances the activity of the immune system, which is centred on cells specialized in attacking and destroying cancer cells. Because of garlic's sulfur content, it protects liver cells from contracting and decaying. It is useful in asthma and a new capsulated drug from garlic named anodal cures typhoid.

Garlic helps to expel kidney stones and colic. It fights against diphtheria and tuberculosis. It is a powerful microbe growth inhibitor of amoebae dysentery, disinfects wounds and insect stings, and aids with constipation, rheumatism, gout and diabetes by inducing insulin and increasing its activities. It helps to cure nose sensitivity, psoriasis, scrub, and fungal infections. It is also used to lessen ear ailments, to prevent toothache and tooth loss, as an intestinal disinfectant and to remove rot. It is a demulcent, stimulant, anti-depressive and works against fatigue.

In folk medicine, garlic is used for hypertension and to inhibit blood coagulation, skin diseases and ulcers. It is carminative, aphrodisiac, diuretic, diaphoretic, expectorant, spasmolytic, and antiviral. It promotes leukocytosis and has anthelmintic properties. It exerts antibacterial activity on the urinary and gastrointestinal tracts, and decreases their aptitude to adhere to the walls of the urinary system. Garlic oil is used as an antiviral, increases the effects of the immune system, reduces blood sugar levels, and helps to reduce cholesterol and triglycerids, thus hardening the arteries and blood clotting. It is a general tonic and arterial vasodilatation treatment for low blood pressure, activates the memory, builds muscles, treats amoeba, dysentery, and influenza, is anti-alopecia and makes hair strong, extracts the poisons from the body, acts as an anti-inflammatory by removing parasitic worms, acts on diuretic menses and piles, activates blood circulation and stimulates the functioning of the kidney.

- **Other uses**: Garlic is a vegetable crop, food flavouring and appetizer.
- **Caution**: An excessive intake of garlic may cause haemolytic anaemia, skin sores and inflammation. Large quantities irritate the urinary and digestive systems and are toxic to dogs. Oil is not for use by eczema or psoriasis patients. External applications can be highly irritable to the skin. Garlic causes colic in babies if taken by breastfeeding mothers. Diabetics should avoid taking high quantities of garlic since it extends the time for blood coagulation by 20-30%; this should be taken into account in cases of bleeding wounds in diabetics. Garlic aromatic compounds can also be released through the lungs and skin, and the garlic smell can be got rid of from the breath by taking parsley.

Garlic field

- **Arabic name**: Alder, Naght, Maght
- **Scientific name**: *Alnus glutinosa* (L.) Gaertn
- **Common name**: Alder
- **Family name**: Betulaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Bark, leaves, dried bark of young twigs, the inner bark of 2-3-year-old branches, fruit cones, and male flowers.
- **Chemical constituents**: The bark contains tannins (tannic and gallic acids), a flavone glycoside of the hyperoside type and alnin. Leaves contain alnusfoliendiolone, 3-b-hydroxyglutin-5-en, D-amyrenone, taraxerol, b-sitosterol, wax and sugars. The bark and young shoots contain 16-20% tannic acid, and colouring materials are not very important in tanning. Roots contain ornithine and L-serine.
- **Pharmacological action**: The leaves are used as poultices for cooling and relieving inflammation. The bark is alterative, astringent, febrifuge, cathartic, detersive, diuretic, sudorific, tonic, and vermifuge. Black alder is a folk remedy for cancer, fever, foot ailments, tumours, and worms. Fresh bark is used for vomiting. It is used to bathe swellings and inflammations, especially of the mouth and throat as a gargle for sore throats, and has been known to cure inflammations of the chest, angina and pharyngitis, as an enema in hematochezia and is useful as an emetic and for wounds. The bark is used against haemorrhages, diphtheria and bleeding. The bark and/or roots are used as anti-carcinogens and anti-inflammatory tumours of the throat.
  A decoction of the inner bark in vinegar is a useful wash against lice and skin problems such as scabies and scabs in general. The liquid is a tooth wash. Leaves are galactagogue and vermifuge, help reduce breast engorgement in nursing mothers, tonic and cure rheumatism. Their decoction is used in folk medicine for cancer of the breast, duodenum, oesophagus, face, pylorus, pancreas, colon, throat, tongue, and uterus.
- **Other uses**: The wood is elastic and soft, light and easily worked. It is used for cigar boxes, pumps, wooden carvings, shoes and slippers. The bark is used for leather tanning, and imparts a hard red appearance. The wood is used in making the moulds for glass manufacture. The tree provides a habitat and food for wildlife, watershed protection, and is used in environmental forestry. With little ornamental value, it is recommended only for wet sites.
- **Caution**: No reports.

- **Arabic name**: Sabra, Sabir, Sabar, Sbeir, Qarn Al-Ghazal
- **Scientific name**: *Aloe vera* L.
- **Common name**: Aloe, Bitter Aloes
- **Family name:** Liliaceae / Alliaceae
- **Growth habit:** Succulent plant
- **Life cycle**: Perennial
- **Part/s used**: Leaves and leaf sap.
- **Chemical constituents**: Anthraquinones, polysaccharide, aloin, emodin, isoemodin and a mixture of glycosides known as aloene. Aloene also contains free or bound oxy-methyl anthraquinone and anthranol. The plant contains resins, a small amount of volatile oil, naphthoquinone derivatives and poisonous saponins.
- **Pharmacological action**: It is expectorant, vermifuge, wound-healing, of possible influence on inflammatory skin disorders, anti-tumour and anti-ulcer. Plant gel and propels are used for detoxifying toxic material in plant mixtures. As a cosmetic, it is effective for atopic skin, as a digestive, and stimulates stomach, intestine and blood circulation. It is formulated as a soap composition, which is effective in cleaning and protecting the skin, as well as for athlete's foot and other diseases caused by moulds and fungi. It is used for burns and relieves symptoms in the upper intestinal tract. The plant extract has a radical-scavenging activity, and is included in anti-obesity compositions and in compositions for the treatment of prostatic disease. It is also used in antismoking agent compositions, and in feet massage pack compositions for dermatophytosis treatment. It is also formulated in cosmetic compositions for stimulating hair growth and/or reducing hair loss, as beauty soap, as a cosmetic emulsion and as a topical insect repellent. Fresh juice is used in the treatment of the spleen.

  The plant is abortifacient, anodyne and purgative, cures fever, headaches, ophthalmia, constipation, amenorrhea, alopecia and scalds, and even speeds up recovery time after surgery. It may be tried for blisters, insect bites, rashes, sores, herpes, fungus, vaginal infections, conjunctivitis, sties, allergic reactions, and dry skin. Other topical uses include treatments for acne, sunburn, frostbite (it seems it prevents decreased blood flow), shingles, screening out x-ray radiation, psoriasis, preventing scarring, warts, ageing wrinkles, and eczema.

  Internally, aloe is promising in the fight against AIDS; it seems it helps prevent opportunistic infections in cases of HIV and AIDS. It appears to be of help in cancer patients (including lung cancer) by activating the white blood cells and promoting the growth of non-cancerous cells. Orally, aloe may work for heartburn, arthritis, rheumatism pain and asthma. It lowers blood sugar levels in diabetics and may work internally

against congestion, intestinal worms, dyspepsia, stomach ulcers, colitis, haemorrhoids, liver problems such as cirrhosis and hepatitis, kidney and urinary tract infections, and as a general detoxifier.
In folk medicine, aloe oil is traditionally used to promote the healing of cracked skin as well as various bad skin injuries and sores. Regular usage has shown to accelerate the healing of haemorrhoids. It treats eczema, skin inflammations, burns and wounds and is useful for hair.

- **Other uses**: It is an ornamental plant. Chopped salty leaves are used to feed cattle.
- **Caution**: Plant ingestion may cause some minor symptoms such as rashes, vomiting or diarrhoea; the ingestion of small amounts may not cause any symptoms at all. Some species of aloe may contain hydroxyanthracenes (aloins, etc.). Dried leaf juice (a hydroxyanthracene derivative 13-40%, aloin A (barbaloin) and aloin B. aloe) causes bleeding and is thus regarded as anti-medication in cases of pregnancy, normal menstruation and piles. Ingestion of the plant in high doses causes some symptoms such as diarrhoea, vomiting, and skin eruptions. This species is also known to cause problems in animals.

The plant in a home garden

- **Arabic name:** Mallisah Shrub, Lwaiza, Lwaiza Adiyya, Lwaiza Shujairi
- **Scientific name**: *Aloysia triphylla* (L'Hér.) Britton
- **Common name**: Lemon Verbena
- **Family name**: Verbenaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Leaves and flowers.
- **Chemical constituents**: The essential oil's main components, which are limonene (10.1%), nerol (11.9%), geraniol (15.4%) and spathulenol (13.1%).
- **Pharmacological action**: It is anti-spasmodic, aromatherapeutic, febrifuge, sedative and stomachic, and is used as a condiment, a drink (as an infusion of leaves), in perfumes and in cosmetics.
  In folk medicine, the plant is used as an anti-rheumatic and lactagogue. It is also used for insomnia, headaches and toothaches. It is anti-pyretic, anti-epileptic, stomachic, antiseptic, calming, carminative and digestive. It improves psychological cases and stimulates memory.
  In folk medicine, the refreshing sweet-scented oil promotes digestion and aids the treatment of flu, feverish colds and fevers. It helps in the strengthening of the nervous system.
- **Other uses**: Leaves are edible and are occasionally cooked like spinach, but are more commonly used as a flavouring agent in salads, fruit salads, and condiments, and have a delicious lemon-like flavour. A delicious and refreshing tea is made from the leaves. The essential oil is used as an insecticide, potpourri, a repellent, and also in perfumery and liqueurs. Other uses include herb pillows, and as a lemon flavouring for drinks, salads, jellies and teas. It is mood uplifting, revitalising and promotes mental clarity and alertness.
- **Caution**: The essential oil from the plant might sensitize the skin when exposed to sunlight. It is a photosensitizing oil, not to be used before going into the sun. It can be irritating for those with sensitive skin.

In a home garden

- **Arabic name**: Urf Eldeek, Al-Shab Al-Ghawi
- **Scientific name**: *Amaranthus caudatus* L.
- **Common name**: Love-Lies-Bleeding, Pendant Amaranth, Tassel Flower
- **Family name**: Amaranthaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: The whole plant.
- **Chemical constituents**: Triterpenes and triterpene saponins, alkaloids, protein and mineral salts, mainly: calcium, phosphorus, iron and zinc. Provitamin A, vitamins K and C, reduced sugar, flavonoids, phenol, lipids, carbohydrates, tannin, red-violet betacyanin pigments, amaranthine, isoamaranthine, ascorbic acid, folates, riboflavin and pyridoxine.
- **Pharmacological action**: It is an antioxidant, astringent, anthelmintic and a diuretic used in strangury treatment. It is used externally to treat scrofulous sores. It protects against cardiac diseases and cardiovascular vein diseases in relation to ageing. It also increases immunity against diseases.
- **Other uses**: Leaves are used as fresh vegetables, cooked the same as spinach or added to soups. They are of light taste, and are rich in vitamins and minerals. Seeds are nutritious, and can be eaten cooked, ground in the form of powder, baked or used as popcorn. They can also be completely cooked until they take on a gelatinous appearance. Seeds contain 8-13% protein of a high quality, are rich in amino acids such as lysine and contain good amounts of calcium, phosphorus, iron, potassium, zinc, and vitamins E and B complex. The plant is considered as an ornamental.
- **Caution**: Species belonging to this genus are well known to be toxic because of nitrite accumulation in the leaves when grown in nitrogen-rich soils. This is clearly observed in soils fertilized by chemical fertilizers. Nitrates cause stomach cancers, blue babies and other health problems. It is advised not to feed on the plant when grown in inorganic soils.

- **Arabic name**: Khula Baladi, A'khula, Bithr Al-Khula, Khula Tibiyyah, Saq Al-Aroos
- **Scientific name**: *Ammi visnaga* (L.) Lam.
- **Common name**: Toothpick, Bisnaga, Toothpick Weed
- **Family name**: Umbelliferae / Apiaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Dried mature fruits (commercially known as seeds).

In the field

- **Chemical constituents**: Volatile oil (0.2%) and sterols, visnagin, visnadin, a volatile diterpenoid, flavonoids, phenolics, khellin (1%), which is a furochromone (5, 8-dimethoxy-2-methyl-4, 5-furo-6, 7-chromone), bitter substances, and glycoside-khellol. Seeds contain volatile oils.
- **Pharmacological action**: Khellin is a diuretic, a remedy for renal colic, expels kidney stones and sands, and cures inflammations and disorders. It is an antiseptic, cleans the urinary system, prevents heart attacks and debility, and cures asthma and whooping cough. Seeds are sedative, and are used for intestinal colic, kidney and gallbladder ailments. The essential oil includes linalool and its derivatives have antibacterial and antifungal activities, stimulate hair growth and are used to treat skin problems and rashes. Khellin is a radical scavenger. Visnadine is an active principle extracted from the fruit, preferentially inhibits contractile responses, and is hypoglycaemic, anti-diabetic, anti-asthmatic, lithontriptic, and a vasodilator. A fruit decoction mixed with honey and fenugreek seed oil is used to treat skin cancer, fungal hair loss, leucoderma and psoriasis. Seed extracts are available in pharmacies for use as a diuretic and for kidney stones.
- **Other uses**: Plant leaves are edible and chewed raw for a pleasant aromatic flavour. The fruiting pedicel is used as a toothpick whilst the seeds have been used as a tooth and mouth cleaner. Seeds are used as a sedative for kidney ailments.
- **Caution**: Over-doses for a long period cause toxicity and harm kidneys, characterized by increases in the serum glutamic-pyruvic and glutamic-oxaloacetic transaminases, increases in plasma urea, changes in the blood appearance, and/or death. Khellol is a strong and persistent irritant compound, while visnagin and khellinol are intermediate persistent irritants. Patients who use blood vasodilators should not use the plant and should consult a specialized practitioner, and patients who use drugs for heart attacks should never use it. Ammi seeds consist of volatile oils; boiling should thus be avoided and they should only be used after maceration. A long period of plant use causes headaches and vomiting. The plant is strictly regulated in certain countries.

Flowering plant

- **Arabic name**: Louz, Lo'oz
- **Scientific name**: *Amygdalus communis* L.
- **Common name**: Almond
- **Family name**: Rosaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Fruits, seeds, fruit oil, leaves with flowers and roots.
- **Chemical constituents**: Fruits of sweet almond contain phenolics and flavonoids, phytosterols polyphenols, polypeptides, kernel fatty acids, triacylglycerol and lipids. Fatty acids constitute 43-57%, albumin 20-25%, mainly alginin and casein, 6-10% sugars, and the yeast emulisim. Sweet almond is of a high nutritional value, rich in oil and fatty acids including oleic (77%) and linoleic (20%) acids, mucilage (3-14%), proteins (20-25%), sugars, vitamins A, B_1, B_2, PP, B_5, B_6 and mineral elements including calcium, phosphorus, potassium sulfur, and manganese. It is a rich source of vitamin E and monounsaturated fat.
  Bitter almond is similar in content to sweet almond but contains lower amounts of fatty oil (45%) and yeast oil. In addition, it contains cyanogenic glycosides, amygdaline and almond oil, olean, linoleic acid and steren.
- **Pharmacological action**: Oil is used to clean the eyes and face, as a laxative, and as a topical ointment for preventing and treating diaper rash, dry skin, wounds and arthritis. It is used in food and dietary components to decrease the risk of cardiovascular disease, skin and hair care and colouring compounds comprising silk protein. It is also used for urinary inflammations, improved complexion and possibly a lower risk of cancer. Consumption of almonds elevates high-density lipoproteins and lowers low-density lipoproteins. Using almonds in the daily diet might lower cholesterol and blood lipids. Almonds are considered a nutrient for the brain and nervous system. It is said to induce high intellectual levels and longevity. Almond oil is a nutritive aphrodisiac, both as a cream and when internally consumed. Almond constituents have anti-inflammatory, immunity-boosting and anti-hepatotoxicity effects. Sweet almonds are used for obtaining emulsifying substances (milk and almond drink), and sweet almond oil is used as a laxative and purgative for children. It is also incorporated in liniments and skin ointments.
  In folk medicine, bitter almond oil is regarded as good for all types of skin smoothening, making it supple and soft. It is especially suited for dry, sensitive and irritated skin as it helps with softening, revitalizing and

nourishing the skin. It is beneficial in relieving the itching caused by eczema, psoriasis, dermatitis and all cases of dry scaly skin, and also soothes sunburns.

- **Other uses**: It is a fruit tree. Green fresh fruits are eaten raw, dried seeds are used in nut mixtures, and a drinkable juice can be made from sweet seeds.
- **Caution**: Bitter almond seeds contain the toxic hydrocyanogen, and therefore it has very limited uses in food and medicine. The amygdalin glycoside degrades to release HCN, and therefore raw seeds are toxic. Seeds are known to contain cyanogenic glycoside prunasin corresponding to 300-3400 mg HCN/kg.

Wid almond

- **Arabic name**: Shabath, Sathab Al-Barr, Hulwa
- **Scientific name**: *Anethum graveolens* L.
- **Common name**: Anise, Dill, Anet
- **Family name:** Umbelliferae / Apiaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Mature fruits contain fatty oil containing carbon.
- **Chemical constituents**: Essential oil (3-4% of fruit weight) consists of carbon, limonene (60%), phellandrene, B- phellandrene, pentadicat, anethine, terpenes, paracymene, tridecane, octadecane, phenylpropene, octanol, esteren, noadecan, myristicin, camphor, isoeicosane, hexadecane, dioxane polyphenol nitrates, nitrites, oxalates, nitrogenous materials and resin.
- **Pharmacological action:** The seeds are carminative, aromatic, and antioxidant. They are mildly diuretic, galactagogue, stimulating and stomachic. They are used in a salt-free diet as a salt substitute; dill water is stomachic and is used against insomnia. The oil is anti-oxidative and antimicrobial. Herbal tea is used for colic and as an antibacterial, and the volatile oil has an anti-diabetic effect. Oil perfume reduces appetite when used with fennel and baking soda. Fruit decoction is a hemicryptophyte aphrodisiac, and is used against bladder diseases and kidney stones. The oil is antipyretic, lowers glucose levels by normalizing insulin levels, supporting the pancreas' function, and is used for bronchial catarrh and liver deficiencies. Seeds are a remedy for a wide range of digestive problems. An infusion can be made for gripe in babies and flatulence. The essential oil relieves intestinal spasms and griping and helps settle colic. Chewing the seed improves halitosis. Dill alleviates coughs, colds, flu, period pains, and stimulates lactation. Fruits are used as a stomach tonic and cure its disorders. They are a body and heart tonic, and are useful in hypertension, as a sedative, and for muscle cramps and fast breathing. Dill prevents the formation of gallbladder stones and is anti-cholesterol. It is useful for intestinal diseases and respiratory system ailments. A fruit decoction calms stomach aches, and intestine and menstruation ailments. It is used in eye cleaning and for curing swellings of sexual organs.
  In folk medicine, dill oil is used in cases of mouth and gum inflammation; it is useful in ophthalmic cases, is antispasmodic and relaxes the nerves and muscles of arms and legs. It is a sedative for convulsions, releases gases, acts as a diuretic and helps lactation.

- **Other uses**: Dill is used in teas, seasoning for butter, cakes, bread, vinegars, soups, fish flavouring, pickles and salads, and its flowers are used in crafts. Flower heads or seeds are used to make dill vinegar and the whole or ground leaves or seeds are used in cooking. Leaves or flower heads, seeds and stalks are used in pickling. Chopped leaves are excellent in sour cream and cucumbers, in salads and on fish. The herb is used in the perfuming of soaps and other cleaning materials, in some alcoholic and non-alcoholic drinks and in cosmetics. The anethole is good as an insecticide at home. The oil is used in food products such as biscuits, cakes, yoghurt products and the meat industry and its various products. Dill is a preservative material for food and in the making of certain types of cheese and as a butter flavouring agent.
- **Caution**: Patients of kidney diseases are advised not to increase their consumption of dill in food. Fruit and fruiting herbs and seeds contain an essential oil known to contain unspecified quantities of estragole.

- **Arabic name**: Fam Al-Samaka, Abu-Fam, Anf-Al-Thoor
- **Scientific name**: *Antirrhinum majus* L.
- **Common name**: Common Snapdragon
- **Family name**: Scrophulariaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Leaves and flowers.
- **Chemical constituents**: Tannic acid, gallic acid, resin, fruit sugar and other sugars, renatin, bitter essence, mucilage, linarin, acetic acid and 9-nethoxy-psoralen.
- **Pharmacological action**: Plant decoctions and infusions are used for colic, inflammations, haemorrhoids and stomach acidity. Externally, it is used as a laxative, skin poultice and antiseptic. The plant is anti-inflammatory and used for sores. A root decoction is very effective against gonorrhoea, Blight's disease and psoriasis. The plant has bitter and stimulant actions, and its leaves are employed in cataplasms for tumours and ulcers. It was previously used as a preservative against witchcraft. The plant is also used for liver diseases and as an astringent, detergent, diuretic, and for scurvy.
- **Other uses**: Plant stem bases are edible fresh.
- **Caution**: Insoluble calcium oxalate causes toxicity.

Plants of different flower colours

The Jordan River

- **Arabic name**: Krafs, Krafs Nabti
- **Scientific name**: *Apium graveolens* L.
- **Common name**: Common Celery, Smallage
- **Family name**: Umbelliferae / Apiaceae
- **Growth habit**: Herb
- **Life cycle**: Biennial
- **Part/s used**: The whole plant at flowering stage, seeds, roots, leaves and stem.
- **Chemical constituents**: Carveol and fatty acids including myristic, palmitic, palmitoleic, stearic, petroselinic, oleic, and linoleic acid. Furocoumarins and bergapten, fatty oils, nitrogen elements, sugars, vitamins A, B, C, E, and mineral elements. Volatile oil in leaves and roots. The herb contains flavon glycoside apiin, falarinon and carveol.
- **Pharmacological action**: It is a potent plant against experimentally-induced hepatocarcinogenesis in rats. It is used in mixtures with other herbs in the treatment of cancers and diseases affecting the liver, has antibacterial potential, and is an antioxidant and free radical scavenger. It is carminative, a stimulant,

emmenagogue, diuretic, tonic, nervine and useful in cases of hysteria by promoting restfulness and sleep, and diffusing a mild sustaining influence through the system. It is good in combination with *Scutellaria* for nervous cases with hoarseness and loss of voice. It is used for rheumatism. *Apium* formulations are used as an aphrodisiac and to cure kidneys. Leaf and root juice are kidney activators. *Apium* is an antiseptic, reduces uric acid and removes obesity. Eating fresh young stems stimulates lactation after birth.

Seeds are a stomachic and aphrodisiac; they are also a blood cleanser and are taken for arthritis, asthma, bronchitis, colic, gout, hepatitis and rheumatism. They show anticonvulsant, anti-inflammatory, sedative and tranquillizing properties. The seeds are also used in pills for pain alleviation, and contain 3-N-butyl-phthalide that lowers blood pressure in rats. Its oil is an antispasmodic, a nerve stimulant, and is both toning and spicy. Leaves and seeds are effective for enuresis. The plant is good for treating rheumatism and nervousness.

Bergapten is potentially useful for psoriasis, when used with caution, and when celery is included with other umbellifers in the diet as a source of psoralens. The perfume, which has a sweet spicy aroma, may stimulate milk flow, balance hormones, relieve the liver and eliminate urinary system problems.

In folk medicine, the aromatic volatile oil is a stimulant for gastric secretion, analgesic and a sedative for the central nervous system. It is also useful in cases of urinary system inflammation, and decreases hypertension, gout, rheumatism and arthritis. It is a diuretic, helps in menstruation, strengthens the liver and spleen, cures urine retention, facilitates the passage of urinary calculi, and is useful in cases of dyspnoea and bronchial asthma.

- **Other uses**: The plant is edible fresh or as a juice. It is mixed in salads and vegetables.
- **Caution**: Bergapten in the seeds can increase photosensitivity, so the external use of essential oil in bright sunshine should be avoided. It should also be noted that this may constitute a risk factor in skin cancer. The oil and large doses of seeds and roots should be avoided during pregnancy, as they can act as a uterine stimulant. In general, the plant is not used during pregnancy or in cases of kidney disorders. It may cause abortions because of the apiin. The aromatic oil should only be used under medical supervision and seeds prepared for sowing are not used in medical preparations.

A common celery field

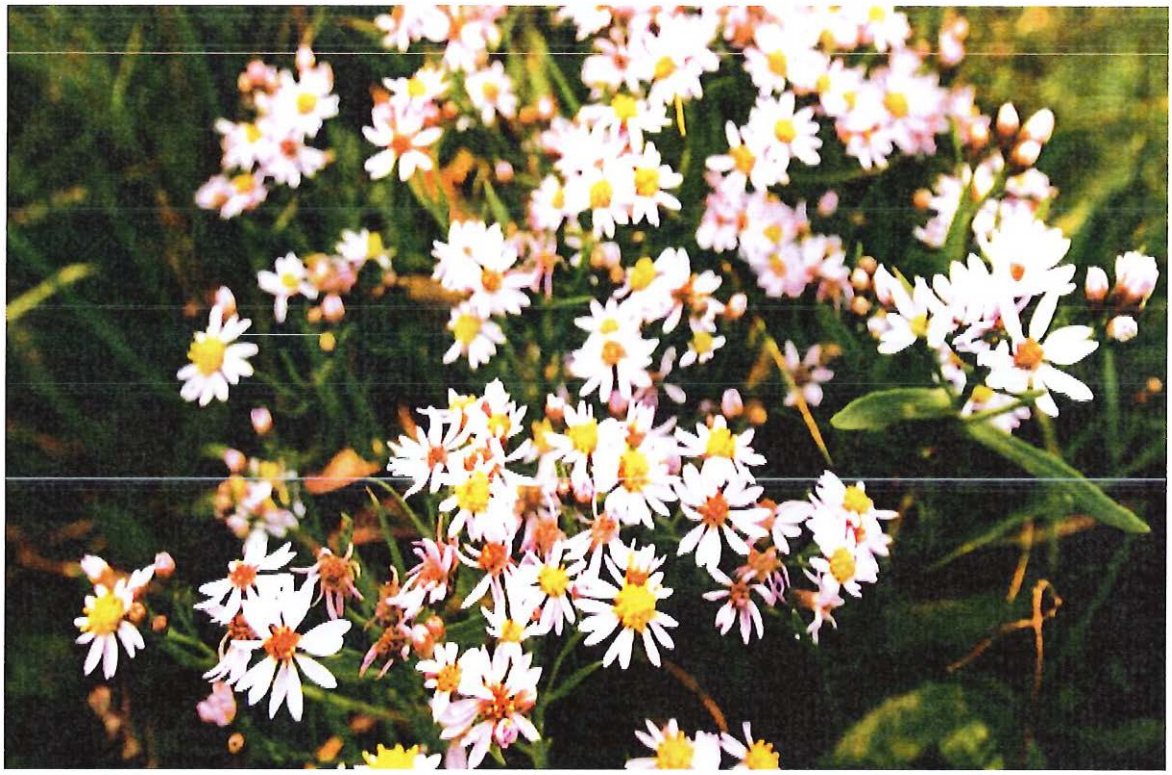
Fruiting branch

- **Arabic name**: Qaiqab, Qutlob
- **Scientific name**: *Arbutus andrachne* L.
- **Common name**: Oriental Strawberry Tree
- **Family name**: Ericaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Fruits, bark, and roots.
- **Chemical constituents**: Arbutin, charcoal, narcotic constituents, glycoside from quinone (hydroquinone) called arbutin, tannin, gum and coal. Leaves and bark contain tannic and gallic acid.
- **Pharmacological action**: The plant is a narcotic, its bark is used in tanning, and an alcoholic drink can be prepared from its juice. The plant gum decoction is diuretic, anti-diarrhoeal, anti-bleeding and can be burned to induce aromatic smoke. A fruit decoction is rubbed to cure haemorrhoids and burns. An infusion of leaves is used for diarrhoea and cystitis.
- **Other uses**: An alcoholic beverage of the fruit is very aromatic, and can be used in cakes in (preferably) small quantities. The fruit itself is edible and delicious. The plant's wood is used in making chairs and the bark is used in tanning. The plant is a forestry tree.
- **Caution**: Fruit should not be eaten in large or even medium quantities, as it causes stomach/intestinal upsets, vomiting and even seizures in some people.

- **Arabic name**: Hulyon, Asparagus
- **Scientific name**: *Asparagus officinalis* L.
- **Common name**: Asparagus, Sparrow Grass
- **Family name**: Liliaceae / Alliaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: Rhizome, stem, fruit, roots, and vegetative branches.
- **Chemical constituents**: The plant is a low-calorie source of folate and potassium. Stalks are rich in antioxidants. Asparagus provides substantial amounts of two antioxidants and vitamins A, B_1, B_2 and C. It has a good amount of fibre. It contains asparagine, arginine, carotene, sucrose, starch, mucilage, folic acid, steroidal glycosides, steroidal saponins, carbohydrates, glucoside koniferin, lipids, protein, fibres, essential oil and different mineral elements including calcium and phosphorus salts, manganese, iron, potassium, copper, boron and iodine.
- **Pharmacological action**: The plant is aperients, diaphoretic, nutritive, a cardiac stimulant and helps with blood liquefaction. It is used for stomach disorders, diabetes, blood coagulation, arthritis, kidney and liver swellings and water retention. It is utilized in cosmetics formulations as an astringent, cures anaemia and is recommended for weakness and for those of hard memorial work. It is a hair tonic, demulcent, encourages bowel evacuation and is recommended for gout and dropsy. It is also used for toothaches, cancer, parasites, rheumatism, coughs, dryness in the mouth and throat, and constipation. The root is a mild diuretic, laxative, induces sweating, hypoglycaemic, antibiotic, may alleviate urinary inflammation and prevents kidney stones formation. It is recommended for those who suffer from cardiac diseases and jaundice.
  The powdered seed relieves nausea and calms the stomach, and the seeds have antibiotic properties.
  Green asparagus is a good source of vitamin C, contains substances that neutralize ammonia, and protects small blood vessels from rupturing. Its fibre makes it a laxative. Asparagus' crude saponins have anti-tumour activity, inhibit the growth of human leukaemia, ease fatigue, provide anoxia tolerance and analgesia, and are used for memorial enhancement and improvement.
  It is used for treating respiratory conditions and controlling the heart's rhythm, and is good for anaemia, but it can cause insomnia. The plant is rich in calcium, potassium phosphate, iron, manganese and cobalt.

- **Other uses**: Green asparagus is a good source of vitamin C and folacin, and contains moderate amounts of vitamins A and E, potassium and small amounts of iron. Freshly cooked spears are rich in fibre and low in calories and sodium.
- **Caution**: The intake of asparagus roots can result in a distinctive odour in urine. Asparagus root medications should not be used in cases of fluid retention (edema) caused by kidney or heart diseases or by patients of gout, rheumatism, prostate problems, cystitis, neural diseases, kidney stones and cardiovascular diseases. It may cause dermatitis, tear drop, and dyspnoea. It is advised not to be taken raw since it may cause an allergic reaction. It is also recommended not to be taken in cases of diarrhoea and kidney inflammation.

In the field



- **Arabic name**: Aster
- **Scientific name**: *Aster tripolium* L.
- **Common name**: Sea Aster
- **Family name**: Compositae / Asteraceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Roots.
- **Chemical constituents**: Flavonoids, flavonoid glycosides, cafiilister, cyanate esters, and cyanogenic acid.
- **Pharmacological action**: A root decoction is used as a head wash to overcome headaches. Macerated roots are placed on teeth to ease pains.
- **Other uses**: It is an ornamental plant.
- **Caution**: No reports.

- **Arabic name**: Shoofan Mazro'o, Hartaman, Khirtal Zira'ai, Khirtal Ma'arouf
- **Scientific name**: *Avena sativa* L.
- **Common name**: Common Oat, Oats
- **Family name**: Gramineae / Poaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Seeds, stem straw, leaves, and the whole plant.
- **Chemical constituents**: Saponins, flavonoids, lipids, carotene, alkaloids (including avenine and trigonelline), sterols, flavonoids, gluten, starch and vitamin B. It contains a hormone similar to ghrelin, and is rich in silicon, silica, silicic acid, manganese, zinc, calcium, potassium, iron, sodium, phosphorus, carbon hydrates and many other minerals. It contains vitamins A, D, B_1, B_2, PP and E, glucovanillin, avenin, cellulose, amino acids and protein.
- **Pharmacological action**: The plant is diuretic, laxative, anti-depressive, thymoleptic, cardiac tonic, sedative, aphrodisiac, nervine, tonic, and nutritive. It is also demulcent or vulnerary, cerebral tropho-restorative and reflexes nervous irritation from other disorders. It is used for irritation, wounds, chest, throat, stomach and intestinal ailments, dysmenorrhea, hysteria, neurasthenia and neuroses. It cures nervous exhaustion and debility resulting from chronic disease, shingles, and other herpes infections and multiple sclerosis. Oat spirit is used after illness for recovery or physical work, and is a hypnotic. Oats are useful for curing skin problems as a cosmetic. Oat grain peel is useful in lowering blood cholesterol levels, and its straw extract is used for anxiety and depression.

  Oatmeal or gruel is an ideal food for convalescents and can be flavoured with raisins, lemon, butter, or maple syrup. It is easily digested and is a soothing food for the feverish, and is a good first food for those who have experienced intestinal illnesses or food poisoning. Oatmeal is excellent for those desiring a low fat and a low cholesterol breakfast routine. Oat straw tea is recommended for chest complaints. Its strong brew can be added to baths to treat rheumatism, paralysis, liver ailments, gout, and kidney problems. It helps with bladder and bowel conditions, intestinal colic and bedwetting. Straw makes a good wash for skin diseases, flaky skin, itching, frostbite, chilblains, wounds and eye problems. Oat straw foot baths are recommended for tired or chronically cold feet. Oats act against insomnia and nervous irritability, and their spasmolytic ingredients have a sleep-inducing effect.

The plant and its compounds support the nervous system, and its tonic promotes energy to handle stress. It helps reduce over-excitability and facilitates sexual performance.

Oats have been used in certain centuries to treat opium addictions and to help give up smoking.

A seed paste poultice is used with oil to cure itching and leprosy. Stem and leaf poultices are good for skin diseases, including rheumatism. Oat stems and leaves are used in bathrooms to treat rheumatism and bladder and kidney problems. Oats were used before for chest diseases, acute coughs and as medicated plasters useful for gout and acne. Fibres reduce cholesterol levels and oats reduce uric acid blood levels, urinary tract stone ailments and urine disorders and alleviate haemorrhoids pains. Practitioners advise all neuralgia patients, intellectuals and teenagers as well as diabetics and thyroid gland patients to intake oats.

Oats are a sedative; they control many diseases, are an aphrodiatic and cardiotonic, stop lactation and are used for leucorrhoea. They cure whooping cough, nerve fatigue, paralysis, hysteria, herpes, skin infections and sclerosis. Its fermented drink is useful in a bath for rheumatism, paralysis, liver pains, gout, and kidney problems. Stem straw is effective in cleaning the body from skin diseases, skin itches, cold scorches, cold sores, wounds and eye problems. A seed decoction is a diuretic and prevents thirst.

- **Other uses**: Oats have been used as animal fertility enhancers, and are believed to free up testosterone in both men and women for a healthy sex drive. Oats are a preferred food for babies and old patients, and are used to elevate animal fertility.
- **Caution**: No adverse effects are expected from using the plant unless patients have a gluten sensitivity. In such cases, a decoction or spirit is left to settle down or precipitate, and only a pure liquid is used.

- **Arabic name**: Neem, Zanzalikht
- **Scientific name**: *Azadirachta indica A.* Juss.
- **Common name**: Neem
- **Family name**: Meliaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: All parts of the tree have medicinal properties (fruits, seeds, roots, leaves, flowers and bark).
- **Chemical constituents**: The plant oil contains bitter compounds, namely: nimbin, nimbinin, and nimbidin. Seeds contain the complex secondary metabolite azadirachtin and the essential oil consists of triterpenes including nimbin A and B, gedunin, and nimbolin. Leaves contain tannins, volatile oil, meliacin compounds, bitter triterpenes and flavonoids. Margosine is present in bark and tazitene alkaloids in fruits and leaves. In addition, the plant contains aziridine, margosine, margasperin, fixed oil, margospikrin and margostin acid.
- **Pharmacological action**: Traditionally, all plant parts are used for inflammations, infections, fever, skin diseases and dental disorders. The leaf and its constituents exhibit immunomodulatory effects; they also have anti-inflammatory, anti-hyperglycemic, anti-ulcer, anti-malarial, antifungal, anti-bacterial, antiviral, anti-oxidant, anti-mutagenic and anti-carcinogenic properties.
  The plant is a febrifuge, and is used for abdominal pain, colic, and fever. It has anthelminthic, anti-feedant, antiseptic, diuretic, emmenagogue, and insecticidal properties. Neem tree bark can be used as a spermicidal. Its oil is used in cosmetics; it is useful for skincare and in skin elasticity. It is also effective as a mosquito repellent.
  Neem derivatives affect insects', mites', ticks', and nematodes' behaviour and physiology. Patients of chickenpox are advised to sleep on neem leaves, and the neem gum is used in the preparation of diabetics' food, while leaf extracts have significant anti-diabetic potential.
  Chewing neem branches cleans teeth, a root decoction relieves fever, and leaf paste cures acne, measles and chickenpox.
  Neem leaf extract prevents malaria, and the bark's extract is used for gastric hypersecretion and gastroesophageal and gastroduodenal ulcers. Extracts could exhibit hypoglycaemic activity. A toothpaste compound containing an anti-microbial is prepared from the extract. A herbal mouthwash and gel containing neem oil prevent dental plaque and gingivitis.
- **Other uses**: The plant's oil can be made into an antibacterial soap bar, soft soap, gel or liquid. Neem formulations are natural pesticides; the biopesticide azadirachtin medical formulations are used for

preventing and treating parasites in aquaculture. The larvicidal action of ethanol extracts from fruit endocarps of *Melia azedarach* and *Azadirachta indica* is effective against the dengue mosquito *Aedes aegypti*. The tree is of great importance for anti-desertification. It is a forestry tree and an ornamental on streets and in gardens.

❖ **Caution**: Increased doses cause breath problems, although no evidence has confirmed the harmful effect of neem seed oil on the kidney or liver or that it causes any skin problems. Fruits are highly toxic and cause paralysis, breathing disorders and even suffocation.

The whole plant

- **Arabic name:** Bouhenia, Bouhenia Mubarqash, Khuf-Al-Gammal, Shajar Al-Orchid
- **Scientific name**: *Bauhinia variegata* L.
- **Common name**: Camel's Foot, Orchid Tree, Camel's Foot Tree, Mountain-Ebony
- **Family name**: Leguminosae / Fabaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Bark, gum, root, leaves, seeds, flowers and the whole plant.
- **Chemical constituents**: Tannin, glucose, gum, fatty oils (6-16.5%), glycosides including isoquercitrin and astragalin in fresh flowers, 3-glycoside bauhinia mainly made from alkaloid material and tannins, astragalin and gum.
- **Pharmacological action**: The plant is used for malaria and as an antidote to snake poison. It is also used for coughs, dermatitis, menorrhagia, obesity and sore throats. The bark is alliterative, a bowel astringent, a liver tonic, and a remedy for biliousness, leucoderma, leprosy, dysmenorrhoea, menorrhagia, blood impurities, tuberculosis glands, asthma, wounds and ulcers. It is used in gargles for stomatitis. It is an expectorant and an internal remedy for scrofula.

  The bark is a tonic and astringent; it is used as a blood cleanser, anthelmintic, for facial diseases, leprosy, syphilis, and liver diseases, and is characterized as a sedative, tonic and stimulant. An extract of the branches' bark is used for anti-lymphatic tumours and anti-glands lymphatic tuberculosis. It is used against skin, throat and nose cancers. The plant is a demulcent, and flowers are a laxative and increase the number of blood red cells and lower temperature. Roots cure skin diseases and heal wounds, and are carminative and anti-obesity. Leaves are a laxative. The plant cures tuberculosis, uterine dangle, rectum drop, excessive secretion of the thyroid gland, fever, stomach ulcers, lymphatic gland inflammation, mediastinal adenopathy, alternate constipation and diarrhoea, lymphatic cell cancer, indigestion, spleen swelling, an increase in saliva secretion, bleeding piles, menstruation and women's bleeding, wounds and skin sores.

  A bark decoction is a useful wash for ulcers and skin diseases. Dried buds are useful for diarrhoea, worms, piles and dysentery, and their decoction is employed for coughs and bleeding piles. Flowers are a laxative and a good remedy for salivation and sore throats.

  The roots and bark are acrid, cooling, constipating, depurative, anthelmintic, vulnerary, anti-inflammatory and styptic. They are useful for diarrhoea, dysentery, skin diseases, leprosy, intestinal worms, tumours,

inflammations, scrofula, proctoptosis, haemorrhoids, hemoptysis, menorrhagia and diabetes. The root is also carminative.

- **Other uses**: Plant leaves are edible, can be boiled, and the flowers are eaten as vegetables or with fruits. They can also be pickled. A dye is prepared from the plant and tannin is produced from the bark. The wood is used in home furniture. The plant is beautiful and can be used as an ornamental tree. Leaves and flower paste are given to cattle as an anti-diarrhoeal.
- **Caution**: The plant and its extract are only to be used under medical supervision, mainly for those suffering from thyroidal gland disorders.

Plants with different flower colours

- **Arabic name**: Siliq, Salaq, Lifit
- **Scientific name**: *Beta vulgaris* L.
- **Common name**: Cultivated Beet, Chard, Beet
- **Family name**: Chenopodiaceae
- **Growth habit**: Herb
- **Life cycle**: Annual or Perennial
- **Part/s used**: Roots, leaves before flowering, and seeds.
- **Chemical constituents**: Proteins, vitamins A, C, K, niacin, riboflavin, ascorbic acid, laxative materials, oxalic acid, sugar, starch, gum and mineral elements including potassium, calcium, magnesium and iron. Plant roots contain nitrate, saponin, and oxalate. Apigenin flavonoids, namely vitexin, vitexin-2-O-rhamnoside and vitexin-2-O-xyloside, 2,2-diphenyl-1-picryl-hydrazyl (DPPH), phenolics, betacyanins (betanin and isobetanin), ferulic acid ester (*β*-D-fructofuranosyl-*α*-D-(6-O-(*E*)-feruloyl glucopyranoside), *γ*-irone, *α*-cadinol, T-cadinol,bicyclogermacrene and *δ*-cadinene, *α*-pinene, 7-*epi*-silphiperfol-5-ene, *α*-copaene, *β*-elemene, *β*-caryophyllene, *α*-humulene, 2,5-dimethoxy-*p*-cymene, *γ*-himachalene, *γ*-irone, germacrene-viridiflorol,*α*-bulnesene,*γ*-cadinene, *δ*-cadinene, germacrene D-4-ol, spathulenol, globulol, *α*-muurolene,5-*epi*-7-*epi*-*α*-eudesmol, *α*-cadinol,1-*epi*-cubenol, T-cadinol, *β*-eudesmol and *β*-cedren-9-*α*-ol. vulgaxanthin I, betanin, and isobetanin) and phenolics (gallic acid, ferulic acid, chlorogenic acid, caffeic acid, vanillic acid, syringic acid, ellagic acid, myricetin, quercetin, rutin and kampferol.
- **Pharmacological action**: The plant has antihypertensive and hypoglycaemic activity and excellent antioxidant activity, which shows anti-proliferative activity on cancer cells. It is a good natural source for pharmaceutical preparations with hematopoietic effects and for the treatment of anaemia and/or associated conditions.
- **Other uses**: Leaves are eaten green as a leafy vegetable. The plant is used as a natural dye in the food industry.
- **Caution**: Beet greens and Swiss chard are both considered to be high oxalate foods and are implicated in the formation of kidney stones. Eating high quantities of the plant may cause toxicity, because the high content of nitrates, saponins and oxalates in the roots lead to toxicity symptoms in animals such as diarrhoea, general weakness, breathing difficulties, staggering, recumbency and then death. Oxalates cause the formation of kidney stones.

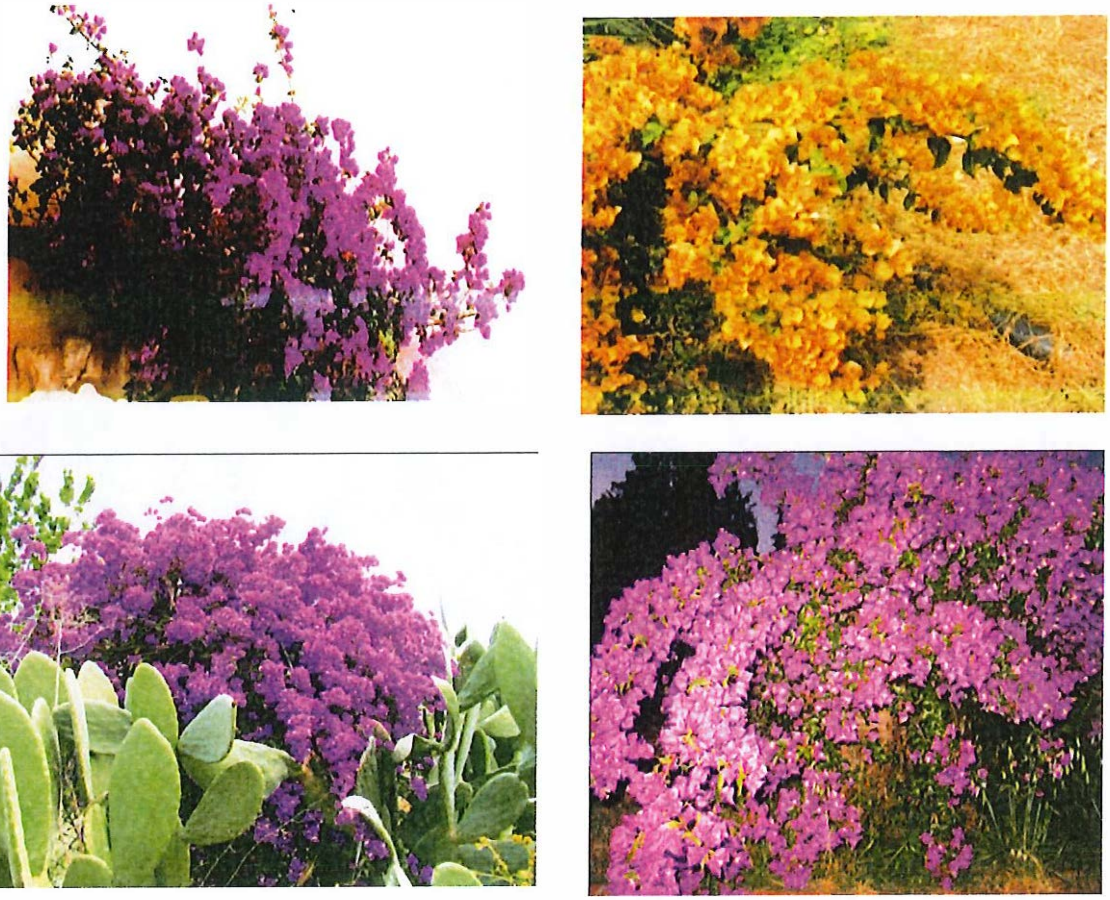
- **Arabic name**: Betula, Shajarat Al-Thamool
- **Scientific name**: *Betula alba* L.
- **Common name**: White Birch, Silver Birch
- **Family name**: Betulaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Buds, young leaves, bark, and oil.
- **Chemical constituents**: Aromatic oil, resin, phenols, flavones, flavonol derivatives, saponins, tannins, vitamin C, tannic acid, camphor, monoterpenoid glycosides in leaves, roseoside glycoside, salicylic acid, methyl salicylate, betulene and betulenol. The pyroligneous oil is turbid (distilled from oil of cade), and contains guiaiacol, creosol, cresol, xylecrol and phenol. The active substance is of a bitter taste and bad smell. Inner bark contains 3% tannic acid, used in tanning, betulene and camphor. Bark distillation yields a substance known as bark tar, roseo oil, and betulium, which are thick materials, sticky, cindery-black in colour, of a distinct smell and contain a high percentage of acetyl salicylic, creosol and guiaiacol. Birch tan is insoluble by 95% in acetic acid and aniline but 100% soluble in turpentine.
- **Pharmacological action**: Birch has a cortisone-like action and is beneficial for bones, psoriasis, and fungal diseases and can be used also in cosmetics. The bark is used in a therapeutic herbal composition beneficial for enhancing the immune system and treating SARS, immune system disorders, Lyme disease, rheumatic arthritis and cancer. It is used in hair preparations for gray hair prevention, and contains tyrosinase activity enhancers containing extracts. A non-irritating shampoo with good detergency, lathering, and hair conditioning activity with a hair care composition contains birch-tree extract. A combination of betulin and pantothenic acid or a derivative stimulates hair growth. Plant cosmetics or pharmaceuticals are used for preventing plasmin-related rough skin and various skin diseases. For anti-aging cosmetics, it is included in a cream to prevent skin aging, roughness, muscles and joint discomfort. It is helpful in relieving arthritis, tendonitis, and rheumatism pains.
  Leaf extract is a general tonic and blood cleanser from harmful materials in cases of kidney disease and dropsy, rheumatism and gout. Externally, it is used in bath water to help cure taenia. The xylem sap is used in perfumes. The plant is a diuretic, emmenagogue, antipyretic, blood cleaner, cholagogues and antiseptic. Essential oil is characterized by its tonic and activity against arthritis and eczema. It is also used for internal infections. Inner phloem is bitter tasting, tonic and used for different inflammations. Plant cell sap is a

diuretic. The plant is also used to cure tumours, skin infections, different fever types, gout, headache, and migraine and to expel kidney stones. It is used for intestinal worms, acne, skin eczema, sores, bruise and psoriasis, congestion and nose sinus. It is also used as a local drug on joints infected by rheumatism, and in poultices for burns, sores and bruise. Plant formulations are used in skin and hair cleaning and to remove dandruff. An ointment prepared from the plant treats rheumatism and is used in shampoos, tooth paste, soup and perfumes. The diluted oil is used for indention pain.

White birch is an antiseptic counter-irritant, sore and stiffened muscles and joints. Leaves are used as a tea for urinary problems and to expel intestinal worms. Tree sap heals sores, boils and carbuncles. The oil is an analgesic, antiseptic, astringent, depurative, disinfectant, diuretic, febrifuge, insecticidal and tonic. As a perfume, it clears the skin and helps in cases of psoriasis and eczema. It is believed that it assists in removing toxins and boosting the circulation, and as a soothing agent and muscle relaxant.

- **Other uses**: Resin-containing fragrant materials are used for automobile interiors, leather tanning, and dye of yellow, red, and cindery colours.
- **Caution**: The plant is not for self-administration, nor for pregnant women. Ingestion may cause some minor symptoms such as rashes, vomiting or diarrhoea. However, small amounts may not cause any symptoms. Exposure to plant juice or sap or a puncture wound from the thorns may produce a skin rash or irritation. Skin wounds from some of these plants can be extremely painful, causing large blisters and skin burns. The plant's perfume should be avoided by pregnant women and plant pollen grains cause allergy.

- **Arabic name**: Majnoona
- **Scientific name**: *Bougainvillea glabra* Choisy
- **Common name**: Paper Flower
- **Family name**: Nyctaginaceae
- **Growth habit:** Woody Climber Shrub
- **Life cycle**: Perennial
- **Part/s used**: Leaves, stems, and flowers
- **Chemical constituents**: Pinitol, betacyanin, flavonoids, tannins, alkaloids and the oxalic acid oxidase in the leaves. Phenolic compounds, ribosome-inactivating proteins, amylase inhibitors and oxidase are also present. Glycosides, carbohydrates, anthraquinone, terpenoids, saponins, steroids, fixed oils and fats.
- **Pharmacological action**: It is antibacterial, antiviral, antioxidant, anti-inflammatory, anti-diabetic, anti-fertility and larvicidal.
  D-pinitol showed an anti-hyperlipidemic effect in type 2 diabetic rats and is claimed to have a similar effect to insulin, as it significantly lowers LDL and VLDL cholesterol levels and significantly increases HDL cholesterol levels. The roots' bark is also anti-diabetic. It is a source of a natural red non-toxic pigment. It is of a lipid-lowering/anti-atherogenic potential, and significantly reduces total cholesterol, triglyceride, and LDL and VLDL levels and significantly increases HDL levels. Plant extracts showed anthelmintic activity against the Indian earthworm with better results than the metronidazole drug. A methanolic extract of *B. glabra* leaves showed a central and peripheral analgesic effect, and an anti-inflammatory property similar to steroidal and non-steroidal agents as well as an antipyretic effect.
  In folk medicine, leaves are used for a variety of disorders, including diarrhoea, stomach acidity, coughs and sore throats. A flower decoction is used for blood vessels and leucorrhea, and a stem decoction is used for hepatitis. A flower infusion is used in the treatment of low blood pressure. The crude leaves' extracts are also used for diabetes.
- **Other uses**: The plant is an ornamental in public and home gardens. *Bougainvillea* can reduce heavy metal pollution through absorption and adsorption in air and water. It is a source of different pigments, including red ones.
- **Caution**: Exposure to juice or sap from plants or a puncture wound from the thorns may produce a skin rash or irritation. Skin wounds from some of these plants can be extremely painful, causing large blisters and skin burning.



Plants with different flower colours

- **Arabic name**: Qarnabeet, Qanabeet, Zahra
- **Scientific name**: *Brassica oleracea* L. var. *Botrytis*
- **Common name**: Cauliflower, Heading Broccoli
- **Family name**: Cruciferae / Brassicaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Flower, leaves, and seeds.
- **Chemical constituents**: Mineral elements including calcium, potassium, phosphorus, magnesium, sodium, iodine, manganese, iron, copper, zinc and chlorine, protein, fats, cholesterol, carbohydrates, fibres, vitamins A, B_1, B_6, and folic acid, stearic acid and boric acid.
- **Pharmacological action**: The seeds are a generic drug used for urinary inflammations, a diuretic, and are used for rheumatism, worms, dropsy, fibrous liver, obesity, tumours and wounds. The ash of the plant is used for scurvy, thrush, voice loss, chest ailments, coughs, gout, joint ailments and headaches. It cleans the kidney and bladder, induces menstruation, and cures glaucoma, scabies, and edema. It prevents the spread of hair growth, degrades uric acid and is useful for hair and nails.
- **Other uses**: It is a vegetable crop.
- **Caution**: The plant is not allowed for patients of gallbladder disease and chronic arthritis. It changes the taste of milk in nursing women, generates intestinal gases, and causes eczema on the hands and allergic reactions.

Flowering head

Cauliflower field

- **Arabic name**: Malfoof, Lakhanah
- **Scientific name**: *Brassica oleracea* L. var. *Capitata* Alef.
- **Common name**: Cabbage
- **Family name**: Cruciferae / Brassicaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Swelling stem, young leaves, roots and the whole plant.
- **Chemical constituents**: Vitamins A, B, C, D, E and K, mineral elements including sulfur, potassium (sulphate and nitrate), calcium, phosphorus, iron oxide, resin, gum extract, fuel, glucobrasidene, rabin, protein, amino acids, senigrin, glucobraskin, peruguetrin, gluconabin, neuglucobrascin, glucopiperin, glucobrasicanabin, fats and sugars. Cabbage juice contains green starch, gum, lezin acid, glucosinolate and gluconasturtiin.
- **Pharmacological action**: The plant is used for ulcers, chronic constipation, asthma, diabetes, scurvy, wounds, and burns. It is also used for skin diseases and inflammation. Leaves are used externally for wounds, sores, inflammations, and skin problems, especially facial acne. A plant extract is used for gastritis and gastrocardiac syndrome. The plant has been used to treat stomach problems, deafness, headaches and hangovers. It cures hepatitis, hypertension, arthritis, gout, menstruation ailments, headaches and insect stings. It is a sedative and its juice with lemon juice is used for jaundice and spleen pain. The plant is also used for dropsy, insomnia, diarrhoea, deafness, neurological disease, sand, stones, encephalic convulsion, liver fibrosis, sunstroke and benign prostatic hyperplasia. It has antibacterial and anti-rheumatic properties.
- **Other uses**: Cabbage is consumed after being cooked, such as rolled with rice and meat or in salads, as it is of high nutritional value. It is also used as feed and fertilizer.
- **Caution**: Plant poultices may cause rashes on the skin if left on for a long period. It may cause local arthritis.

Flowering head

- **Arabic name**: Kohlrabi, Kalam
- **Scientific name**: *Brassica oleraceae var. Gongylodes* Linn.
- **Common name**: Kohlrabi, Turnip Cabbage
- **Family name**: Cruciferae / Brassicaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: The whole plant (stem, leaves, and roots).
- **Chemical constituents**: Minerals including copper, potassium, manganese, iron, and calcium, vitamins C, B-complex, A, B6, folate and thiamine, phytochemicals, goitrogens, various carotenes, carbohydrates, protein, fat and fibre.
- **Pharmacological action**: The plant is a digestive, and helps with weight loss, protects against cancer because of its phytochemical contents, boosts the immune system, regulates the metabolism, stimulates blood circulation, strengthens bones, improves vision, and helps protect muscle and nerve functions. It fights against diabetes, high cholesterol levels and improves liver and kidney functions. The plant has anti-inflammatory effects and significantly increases the blood levels of antioxidant nutrients. Being a good source of dietary fibre, kohlrabi helps heal digestive disorders and has a diuretic quality that leads to smooth bowel movements. Raw brassicas contain goitrogens that can block the thyroid function. These chemicals are easily deactivated by steaming or cooking. It is a cure for asthma, bronchitis, liver disease, gallstones, haemorrhoids, colon inflammation, painful menstruation and anaemia. It is a tonic for children, gastric ulcers, arthritis. It is a good vermifuge, helps hair growth, anti-alcoholism, sore throats, coughs, gout, rheumatism, sciatica and neuralgia. It reduces liver and kidney pains and takes care of duodenal ulcers. It increases blood levels because of its antioxidant mineral elements.
- **Other uses**: Kohlrabi is a vegetable crop and can be eaten raw or cooked. Kohlrabi roots as well as leaves can be used on the table, as both have significant amounts of nutrients. It can be eaten as baked fries or wedges. The leaves are cooked as a vegetable, and young leaves can also be added to salads.
- **Caution**: No reports.

Edible stem

- **Arabic name**: Davidii
- **Scientific name**: *Buddleia davidii* Franch.
- **Common name**: Butterfly Bush
- **Family name**: Scrophulariaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Leaves, flowers, and roots
- **Chemical constituents**: Flavonoids and vitamin P.
- **Pharmacological action**: Flower buds are commonly used for eye care. The plant is frequently used for the treatment of eye diseases such as corneal opacity, dim eyesight, glaucoma, and nebula. The flavonoids repair the damaged cell membrane of the lens, prevent protein denaturation in the lens, reduce lens opacity, and restore vision.
  In folk medicine, it moistens the liver to improve eyesight. The plant reduces inflammation, skin and intestinal vascular permeability and fragility, relieves muscle spasms, promotes the flow of bile from the gall bladder into the duodenum, and increases the secretion of urine. The flower bud drains fire from the body, thereby benefiting the eyes. It is used for red or swollen eyes, eye pain, excessive tearing and sensitivity to light.
  It clears heat, nourishing the liver and improving eyesight. It is primarily used for excessive tearing, nebula and presbyopia. It is also used to treat photophobia and liver and gallbladder deficiencies. It reveals the mystery of eye disease and corneal opacity caused by stagnated liver-fire.
- **Other uses**: Black or green dyes can be obtained from the flowers, leaves and stems when combined. An orange-gold to brown dye can be obtained from the flowers. It is an extremely popular garden plant due to its low maintenance, long flowering season, colourful and fragrant flowers, and its attractiveness to butterflies. The flowering plant has been closely linked with butterflies, moths and hummingbirds.
  The flowers are edible and the plant is normally considered relatively safe. The flowers provide a dye for yellow sticky rice and a rice flavour. It can colonize disturbed and/or abandoned lands and waste places.
- **Caution**: The fruits are potentially poisonous to humans.

- **Arabic name**: Shumshare
- **Scientific name**: *Buxus sempervirens* L.
- **Common name**: Box, Common Box, European Box, Boxwood
- **Family name**: Buxaceae
- **Growth habit**: Shrub or Small Tree
- **Life cycle**: Perennial
- **Part/s used**: Leaves, wood, and root peel.
- **Chemical constituents**: Vitamin C, tannin, volatile oil, alkaloids, buxine, berberine, parabuxine and parabuxonidine in leaves. The bark contains chlorophyll, wax, resin, argotized tallow, gum, lignin, potassium sulphate, lime and lime phosphate, calcium carbonate, magnesia, iron and silica. Steroidal alkaloids are present in roots.
- **Pharmacological action**: The plant has antibacterial and antifungal effects, and is purgative, diaphoretic, and cholagogue. It is used as a wash for skin sores, as a blood cleanser with antipyretic properties, and against mouth ulcers. It is formulated in cosmetic compounds to treat corns, warts, callosities and other skin lesions. The plant's extract is used for treating human immunodeficiency virus infections, malaria and venereal disease. A wood decoction is an alternative for rheumatism and secondary syphilis. The wood's volatile oil is used in cases of epilepsy and is employed for piles and toothache.
  The plant is narcotic, emetic, cathartic and convulsive when taken in overdose. Its tincture was used as a bitter tonic, anti-periodic and cures leprosy. The leaves have sudorific, alterative and cathartic properties, and in powder form it is an excellent vermifuge. The extracts and perfumes are made from the leaves and bark, and their decoction promotes hair growth. It is also used for gout and malaria.
- **Other uses**: The plant is a woody ornamental evergreen shrub, used for bordering gardens and as hedges. Its powdered leaves have been fed to horses to improve their backs and cure bot-worms. The active ingredient was a famous remedy for the bite of a rabid dog. Its hard and heavy timber is used in the manufacture of measuring tools, flutes and other musical instruments, toilet boxes, pill rounders and similar articles. The root is beautiful and fit for dagger hafts, boxes and suchlike.
  Boxwood has been used as a substitute for hops, and the branches and leaves are recommended as the best manure for grapevine.
- **Caution**: It is an extremely dangerous plant, and should never be collected for self-medication. Its ingestion may cause some minor symptoms for humans and animals such as rashes, vomiting or diarrhoea, though small amounts may not cause any symptoms. Exposure to juice or sap from plants or a puncture wound from the thorns may produce a skin rash or irritation. Skin cuts from these plants can be extremely painful, causing large blisters and burning of the skin. The plant contains the toxic steroid alkaloid buxine.

- **Arabic name**: Bunduk Hindi
- **Scientific name**: *Caesalpinia bonducella* Flim
- **Common name**: Fever Nut, Bonduc Nut
- **Family name**: Leguminosae / Fabaceae
- **Growth habit**: Climber Shrub
- **Life cycle**: Perennial
- **Part/s used**: Seeds, roots, leaves and bark.
- **Chemical constituents**: Triterpenoids in seeds include f-amyrin [12-ursen-3 g-ol], g-amyrin [12-oleanex-3 g-ol], lupeol [lup-20(29)-en-3 g-ol] and lupeol acetate [lup-20(29)-en-3-g-yl acetate]. Amyrin and lupeol compounds caused severe inflammations in mice. Seeds contain stearic, palmitic, octadeca-4, octadeca-2, lignoceric, linolenic and oleic acids. They also contain bonducellin, arginine, citrulline and aspartic acid. Fixed oil (25%), bitter element (benducen) and tannic acid are also present.
- **Pharmacological action**: The plant is used for constipation, dysmenorrhea, fever, hepatosis, malaria and neuroses. The seeds' aqueous and ethanolic extract lowered blood sugar levels in induced diabetic rats. Bonduc is a febrifuge, anti-periodic, laxative, anthelmintic and tonic. Pods are roasted and the powder is used as a substitute for quinine. The root's bark has been used for repelling intestinal worms, and is a cure for fever, tumours, coughs and amenorrhea, and also it removes the placenta after childbirth.
  The leaves' juice or paste is used against smallpox, elephantiasis, and liver diseases, for eliminating perspiration's bad odour and for alleviating toothache. The flower tastes bitter and warms the body. Its ash is useful for ascites. The seeds are astringent, and are used to relieve inflammation, contagious diseases, skin diseases, hydrocele, colic and leprosy.
  The seed sprouts are useful for relieving tumours. The fruit is energetic, a bowel astringent and is known as an aphrodisiac. The fruit is also used for eliminating piles, wounds, leucorrhoea and urinary disorders. Boiled

leaves are used as a gargle to relieve sore throats. The roasted leaves and seeds in castor oil can be applied to reduce piles, inflammatory swellings, bronchitis and hydrocele.

Caesalpinia bonducella has proven to be helpful in relieving several ailments, including fever. The kernel of the seed is used for relieving simple, intermittent fevers. The kernel powder, when mixed with black pepper, is diaphoretic and alleviates children's fever, and when used in a mixture with goat's milk and sugar, it removes liver disorders. A kernel decoction cures asthma, and a kernel extract with salt, honey and ginger is given for infant disorders. Kernel paste is applied on boils and other swellings, and leaf paste is useful for alleviating toothache. Leaves' juice extract is used for controlling elephantiasis and smallpox, and a wood decoction is antidiabetic.

- **Other uses**: The plant is a forest and ornamental tree.
- **Caution**: *Caesalpinia bonducella* is a relatively safe herb. However, it must be used judiciously with pregnant or lactating women and also with children. It is always advisable to consult a practitioner before using any herb or supplement.

- **Arabic name**: Shawarib Al-Qitt
- **Scientific name**: *Caesalpinia gilliessii* L.
- **Common name**: Bird of Paradise
- **Family name**: Leguminosae / Fabaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Seeds and roots.
- **Chemical constituents**: Triterpenoids in seeds known as f-amyrin, g-amyrin, lupeol and its acetate, fixed oil, benducen and tannic acid.
- **Pharmacological action**: It is antipyretic, anti-diabetic, anti-inflammatory, and antimicrobial, and is used for sores, ulcers, coughs and cancer.
- **Other uses**: It is an ornamental plant.
- **Caution**: The seeds and green seeds are toxic and induce extreme vomiting and intestinal pains. The roots cause abortion in the early months of pregnancy.

Another cultivar

The Dead Sea

- **Arabic name**: Atharion Al-Hada'iq
- **Scientific name**: *Calendula officinalis* L.
- **Common name**: Pot Marigold, Marigold, Gold-Bloom
- **Family name**: Compositae / Asteraceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Flower petals.
- **Chemical constituents**: Volatile oil (0.1-0.4%), bitter compounds (19%), calendine, carotenes (3%), flavonoid pigments, mucilage (2.5%), resins, albumin, triterpene alcohols, papaverine salt, codeine in the form of codeine phosphate, alkaloid traces and red anthocyanin pigments. Other species contain pyrazine, ketone alcohols, pyrtherolone, sezolon, alcohols, somine, mucilage, saponins, coumarins, bitter glycosides and sterols.
- **Pharmacological action**: The saponin is hemolytic, and it is also spasmolytic, a mild diaphoretic, anti-inflammatory, anti-hemorrhagic, emmenagogue, vulnerary, styptic, antiseptic, choleretic and antispasmodic. Extracts, tinctures and ointments are sometimes used externally to heal stubborn wounds, bedsores, persistent ulcers, varicose veins, bruises, gum inflammations and skin rashes. It is an excellent mouthwash for use after a tooth removal or extraction. It makes good healing salves and tinctures. It is a wound herb and is used against warts. Flowers' and leaves' tea is useful for heart and blood circulation. Its oil is good for skin infections, wounds, rashes, bites and inflammations. It is also used for other inflammations, haemorrhoids and rheumatism.

  The petals' pigment is characterized by its antiseptic and anti-inflammatory effects and as an astringent it helps to heal wounds. It cures bruises, skin sores, frictions, and cracks and protects against skin sensitivity. A petal decoction is internally used for its cholagogue character. A petal cream is externally used for arthritis, to reduce itching and pharyngitis, as a narcotic or sedative in surgery operations, as an emmenagogue and to prevent body moldiness, and is anti-anaemic. It is widely used in female ailments, especially vagina inflammations and breast ruptures. It regulates menstruation and appetite. A petal infusion was used for a long time as a cure for uterine, stomach and breast cancer. An ointment from the plant is used for toe edemas or swelling resulting from cold and for cracked hands. It is a remedy for slow-healing wounds and varicose sores. The oil is antifungal and anti-inflammatory. The flowers' infusion is used for male infertility since it contains a sexual hormone, and also as a neural hectic, for depression, and as a home insecticide.

- **Other uses**: Flower petals give colour to soups, custards, rice, cookies, vinegars and crafts. It is a good companion plant in gardens. The petals are used in cooking, wine, confections and tea. It is a colouring agent and adds colour to potpourri.
- **Caution**: No reports.

Another cultivar

- **Arabic name**: Furshat Al-Zujaj
- **Scientific name**: *Callistemon citrinus* (Curtis) Skeels
- **Common name**: Lemon Bottlebrush, Bottlebrush, Crimson Bottlebrush
- **Family name**: Myrtaceae
- **Growth habit**: Small tree
- **Life cycle**: Perennial
- **Part/s used**: Shoots and flower oil.
- **Chemical constituents**: Essential oils are composed of thirty-two compounds, representing 98.1% of the oil. It is rich in 1,8-cineole (68.0%), □-pinene (12.8%) and □-terpineol (10.6%), and syncarpic acids.
- **Pharmacological action**: It has anti-mycobacterium, antibacterial, and anti-mycobacterium tuberculosis properties.
- **Other uses**: The plant is a repellent against *Trogoderma granarium* that attack stored groundnut seeds. Its syncarpic acids were synthesized, which led to the discovery of triketone herbicides. Mesotrione is a newly developed selective pre- and post-emergence herbicide control for a wide range of broad-leaved and grass weeds in maize. It is derived from a natural phytotoxin obtained from this plant.
- **Caution**: The plant contains chemical substances used as pesticides.

- **Arabic name**: Canna, Canna Hindi
- **Scientific name**: *Canna indica* L.
- **Common name**: Indian Shot
- **Family name**: Cannaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: Leaves, rhizome, seeds and roots.
- **Chemical constituents:** Starch (25%), essential oil, betulinic acid, oleanolic acid and traraxer-14-en-3-one in roots. Lutein, β-carotene, violaxanthin, lignin, hemicelluloses, methylated anthocyanidin glycosides and furfural in flowers. In rhizomes: 5,8-henicosdine, tetracosane, tricosane, and anthocyanins.
- **Pharmacological action**: Roots are sedative, diaphoretic, and diuretic, and are used for women's ailments and problems, dropsy, and fever. Leaves' infusion is a diuretic and anti-fever. It has molluscicidal and antifungal activity. In folk medicine, the root decoction is used for dropsy, fever and indigestion. The seeds' juice cures ear ailments. Flowers cure eye problems and have antimicrobial activity. The rhizome is a vermifuge, especially against *Pheretima posthuma*. In folk medicine, the plant is used for women's problems; its decoction with fermented rice is antimicrobial, and used in the treatment of gonorrhoea and amenorrhoea. The water extract of rhizomes has inhibitory effects on AIDS virus replication. The volatile oil is antibacterial while the aerial parts' methyl extract has an antioxidant effect.
- **Other uses**: It is an ornamental plant. The rhizome is used in food, and tubers are edible raw. Fruits and roots are also edible and a source of starch. Leaves are harvested at the end of the summer season and, after flowering, are peeled to remove the outer skin and then soaked in water for two hours before being cooked. Immature seeds are used in tortilla cakes. Black mature seeds are used as jewellery and in gunshot. Fibres are cooked for 24 hours, then, after being ground, blended and tanned, brown transparent paper is obtained. An orange or pink pigment is obtained from the seeds. Seeds are used in jewellery, and leaf fibre is used in the paper industry. The whole plant is a source of pesticide, and leaf smoke has pesticidal activity.
- **Caution**: No reports.

Plant with different flower colours

- **Arabic name**: Qin'ab, Hashish
- **Scientific name**: *Cannabis sativa* L.
- **Common name**: Hemp, Indian Hemp, Marijuana
- **Family name**: Cannabaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Leaves and flowering stems of female plants (and, to a lesser extent, seeds).
- **Chemical constituents**: Toxic resin material, oily red in colour, made from canabenon (20%), which can be changed upon exposure to air during distillation into cannabinol that is responsible for the effects of marijuana. The herb contains volatile oil, choline, trigonelline, cannabinoids, terpenoids and flavonoids.
- **Pharmacological action**: It is hallucinogenic, anti-glaucomic, serotonergic, sedative, analgesic, a muscle-relaxant, cholagogue and antispasmodic. It has been used for insomnia, depression, neuralgia, migraines, asthma and as a local anaesthetic in dentistry. At present, it is used as an anti-emetic in cancer therapy and for delirium, dermatitis, dysmenorrhoea, glaucoma, malaria, multiple sclerosis and pertussis.
  The plant is also used against nausea, vomiting, premenstrual syndrome, unintentional weight loss, anorexia, spasticity and movement disorders. Preliminary findings indicate that cannabis-based drugs could prove useful in treating inflammatory bowel disease, fibromyalgia, and related conditions. It relieves certain symptoms of spinal cord injuries.
  Cannabis or cannabinoids may be useful in treating alcohol abuse, amyotrophic lateral sclerosis, collagen-induced arthritis, atherosclerosis, bipolar disorder, colorectal cancer, depression, dystonia, epilepsy, digestive diseases, gliomas, hepatitis C, Huntington's disease, leukaemia, skin tumours, methicillin-resistant *Staphylococcus aureus*, Parkinson's disease, pruritus, posttraumatic stress disorder, psoriasis, sickle-cell disease, sleep apnea, and anorexia.
  The active ingredient in marijuana, THC, prevents the formation of protein deposits in the brain associated with Alzheimer's disease. THC prevents the enzyme acetylcholinesterase from accelerating the formation of "Alzheimer plaques" in the brain better than commercial drugs.
  Smoked marijuana benefits HIV patients by reducing HIV-related neuropathic pain. Cannabinoids such as THC had anticancer effects in mice with human brain cancer cells and in people with brain tumours. They may be neuroprotective and show anti-inflammatory benefits in multiple sclerosis. Cannabinoids activities

include cell growth inhibition, and they have anti-inflammatory effects; in addition, tumour regression can be developed as a novel therapeutic agent for the treatment of prostate cancer.

- **Other uses**: A natural fibre obtained from the plant stems can be used in rubber composition and goods. The oil is used in the soap industry.
- **Caution**: It is illegal to grow, possess or sell the plant without government permission. It causes physiological effects in the body, leading to an uncontrolled temper, heart failure and then death. All aerial parts except seeds and fibres contain tetrahydrocannabinol. Seeds of this species are only available in local markets and herbal shops in Jordan.

- **Arabic name**: Flaifla Arnauot, Flaifla Doghliyah, Shatta Harifa, Filfil Har,
- **Scientific name**: *Capsicum annuum* L.
- **Common name**: Ornamental Chili Pepper, Chili, Cayenne Pepper, Mississippi Sport Pepper, Capsicum, Red Pepper, Bird Pepper, African Bird Pepper, Chili Pepper
- **Family name**: Solanaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Fruits
- **Chemical constituents**: Folic acid, capsaicin, colouring materials, capsorubin, capsanthin, cobalt, vitamins A, B and C, potassium, zinc, chlorogenic acid and flavonoids. It also contains germicide materials, volatile oil, vitamins, some glucosides and beta-carotene.
- **Pharmacological action**: The fruit is a stimulant, general tonic, aphrodisiac and stomachic. Internally it is used in small doses for stomach aches, external pain relief, the improvement of digestion with deficient secretions through increasing gastric secretions and the stimulation of intestinal movements. It is appetitic and helps in the absorption of fat, protein and carbohydrates. It is also used in the treatment of rheumatism, sciatica, pleurisy, constipation, fever, cold shock, flu, sore throat, and tonsillitis. Capsaicin is a tonic used in skin creams for herpes zoster pain (shingles), trigeminal and diabetic nerve pain and post-surgery pain. It is an excellent blood thinner, stimulates the blood flow to the skin and mucosa and is excellent for the circulatory system. It stops bleeding because it is rich in vitamin K.
  Seeds are used as a gargle for sore throats and for the treatment of hoarseness, reduce nausea resulting from seasickness, relieve rheumatism and inflammation ailments' symptoms, normalize blood pressure, treat shock and stop bleeding. They are good stimulants and allow the body to heal and self-clean. They are helpful for the gastrointestinal tract, including for stomach aches, cramps, pains and gas. Traditionally, the seeds are a remedy for rheumatic pains and arthritis due to their capsaicin content.
  Cayenne is believed to cause the brain to secrete more endorphins. It is thermogenic and, therefore, may be helpful in weight loss.
  It is employed in intermittent and lethargic affections, and is also used for acute gout, tympanitis, and paralysis. Its most valuable application is in acute diphtheria and malignant scarlet fever. It is used as a gargle or administered internally for the cure of bronchitis and throat irritations. It is an excellent remedy in a tonic

for flatulent dyspepsia and dipsomania. Its regular ingestion is very beneficial for varicose veins, anorexia, liver congestion and vascular conditions. It is externally rubefacient and counterirritant, and is useful for lumbago, neuralgia, putrid sore throats and scarlatina.

- **Other uses:** It is used in food as a pepper or spice.
- **Caution**: The fruit's powder is a strong skin and mucosa irritant. Large doses can cause gastroenteritis. It should be used sparingly in the first trimester of pregnancy. People with gastric problems, ulcers, or altered gastric mucus should avoid eating chili. It causes an intense burning feeling in the mouth and stomach, but less so if the seeds are removed from the fruit. Side effects from the contact of *Capsicum* products with the skin may include a burning sensation, minor redness, or swelling. Creams or ointments containing capsaicin should be kept away from broken skin, the eyes, nose, and mouth.

Pepper field

Other cultivars sometimes regarded as ornamentals

- **Arabic name**: Filfil Hillow, Flaifla Huluwa
- **Scientific name**: *Capsicum frutescens* L.
- **Common name**: Bell Pepper, Sweet Pepper, Christmas Pepper,
- **Family name**: Solanaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Fruits and aerial parts.
- **Chemical constituents**: Alkaloids, apsaicine, capsacutin, capsaicin, capsanthin, capsico ABA, fatty acids, flavonoids, sugars, carotene, volatile oil, and vitamins A equiv. beta-carotene, thiamine (B1), riboflavin (B_2), niacin (B_3), pantothenic acid (B5), B6, folate (B9), E, K and C. It consists of carbohydrates, sugars, dietary fibre, fat, protein, lutein zeaxanthin, trace minerals, calcium, iron, manganese, magnesium, phosphorus, potassium, sodium, zinc and other constituent fluorides.
- **Pharmacological action**: It acts as an appetizer, antiseptic, febrifuge, antibacterial, carminative, diaphoretic, rubefacient, condiment, nerve tonic, digestive, irritant, sialagogue (stimulates secretion of saliva), stimulant, and tonic (mixed with other herbs). Its ingredients are used in curry powder, and are believed to help prevent platelets from sticking together and from forming dangerous blood clots that could result in a heart attack or stroke. It is a stimulating stomachic, and a catalyst for all herbs; it improves circulation, aids digestion by stimulating gastric juices, stimulates the appetite, reduces inflammation, improves metabolism, relieves gas, colds, and chills, and stops ulcers from bleeding. It is good for the kidneys, lungs, spleen, pancreas, heart, and stomach. It is taken for nausea, scrofula, swollen lymph glands, rheumatism, arthritis, and pleurisy. It is used with lobelia (*Lobelia inflata*) for nerves. It is successfully used to treat patients with cluster headaches. Externally, a liniment can soothe stiffness and pain from arthritis, and is a general stimulant used to resist cold, tonsillitis, laryngitis, hoarseness and shingles. It can be taken as an infusion for stomach and bowel pains or cramps. Small quantities of fresh fruit or powder expel worms. For external use, cayenne is made into plasters or liniment, and the tincture can be applied to increase blood flow to areas afflicted with rheumatism, arthritis, pleuritis, or pericarditis. It enhances fertility and delays senility, is a remedy for scarlatina and wards off seasickness. It heals wounds, either fresh wounds or old ulcers.
- **Other uses**: Ground red pepper, when combined with yeast and flour, is baked into a hard cake, which is then ground into the finished spice. It is used in curries and chili powders. In small amounts it is added to bland foods like eggs and cream sauce. It has no odour and its taste is hot and acrid.

❖ **Caution**: A prolonged application to the skin can cause dermatitis and raise blisters. Excessive consumption can cause gastroenteritis and kidney or liver damage. Touching the eyes, genitalia, or any cuts after handling fresh chilies should be avoided. If taken internally, it should not exceed the recommended dose. Cayenne can be irritating for haemorrhoids. It should not be used by people with gastrointestinal problems. Its ointment or liniment should never be applied to broken skin. The seeds can be toxic and need to be avoided. It should not be taken during pregnancy or while breastfeeding.

Fruits of different colours

Gown in plastic houses

- **Arabic name**: Babatha, Bapaya
- **Scientific name**: *Carica papaya* L.
- **Common name**: Papaya, True Papaw, Paw, Melon Tree
- **Family name**: Caricaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: The whole plant, including immature fruits.
- **Chemical constituents**: Papain and lycopene, cysteine proteinases in fruits. Carbohydrates, salts of calcium, magnesium and iron, sucrose, inverted sugar resin materials, tartaric acid, citric acid, pectin, vitamins A and C, thiamin, riboflavin, thiacin, carposide and carbonic alkaloids. It also contains proteins, fixed oils, glycosides and caricin.
- **Pharmacological action**: It is used against diarrhoea and worms. The papaya leaf is a digestive stimulant, contains the important enzyme papain, and relieves sore stomachs. Papaya is a remedy for digestive problems. Papain is applied topically for the treatment of cuts, rashes, stings and burns. Papain, when prepared as an ointment and in the form of a gel-like paste, is used for a ruptured disc by injection. Cosmetic preparations contain papaya enzymes. Cysteine proteinases are anthelmintic. In folk medicine, the plant is used against gastrointestinal nematodes, and as an anthelmintic and refrigerant.
  Medical research in animals has confirmed the contraceptive and abortifacient capability of papaya, and the seeds also have contraceptive effects. Papaya phytochemicals may suppress the effects of progesterone. It is an emmenagogue and is used for amoeba and contaminated wounds, to solve excessive mucus in the mouth and stomach, to reduce blood sugar, and to cure diarrhoea. Leaves are digestive and contain the important enzyme papain. They are antacids and overcome gastritis.
  Papaya fruit juice has an *in vitro* anti-proliferative effect on liver cancer cells, probably due to its lycopene component or its immune system stimulation. Papaya seeds could be used as an antibacterial agent for *Escherichia coli*, *Staphylococcus aureus* or *Salmonella typhi*, and a seed extract may be nephroprotective (protects the kidneys) in toxicity-induced kidney failure. Papain induces insect resistance in papaya, and possesses antioxidant activity.
- **Other uses**: It is a fruit tree, and the plant is regarded as a spice. Small fruits or leaves are boiled with meat to speed up stewing.

❖ **Caution**: Fruits and seeds contain contraceptive and abortifacient materials. Plant cell sap contains agitating materials and the enzymes chymopapain and papain. Leaves contain the carpaine alkaloid and seeds contain the carpasemine alkaloid. Cell sap causes irritation to and inflammations of the eyes and skin.

Flowering plant

- **Arabic name**: Osfur, Qortum
- **Scientific name**: *Carthamus tinctorius* L.
- **Common name**: Safflower
- **Family name**: Compositae / Asteraceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Roots, flowers (petals), leaves, seeds and oil.
- **Chemical constituents**: Flavonoid, polysaccharides, phytoestrogens and terpenes, 1-ribityl-2, 3-diketo-1, 2, 3, 4-tetrahydro-6, 7-dimethyl quinoxaline, riboflavin, uracil-ribofuranose, and phenol. Seeds contain protein, fat, carbohydrate, fibre, ash, Ca, P, Fe, and the vitamins thiamine, riboflavin and niacin. The oil contains myristic (with lauric and lower acids), palmitic, stearic, arachidic (with trace lignoceric), oleic, and linoleic acids. Safflower florets contain carthamin and safflower yellow. Flavonoids and oxycoric acids are present in flowers as well as 6-hydroxykaempferol-3-O-glucoside. The plant also contains folic acid, iron and copper salts, vitamins A and C, lipids, hulian, cellulose and an enzyme in roots that coagulates milk.
- **Pharmacological action**: The plant contains anti-tumour agents, and it lowers blood pressure. A mixture of safflower with parsley oils is used for halitosis. It inhibits haemolytic activities of snake and scorpion venoms, and flavonoids are anti-oxidative and anti-inflammatory. The roasted seed drink prevents bone disease; polysaccharides activate macrophages and the production of anticancer compositions. A composition of seed extracts in the form of powder or liquid promotes the generation of bones, tissues and teeth and can be used for treating or preventing osteoporosis or periodontitis. The composition can be used in the form of toothpaste or a gargle, and as an additive of the feed for a hatcher to strengthen eggshells.
  Carthamin can be used as a natural antioxidant in the food, cosmetics, and pharmaceutical industries. It is a therapeutic agent for haemorrhoids, sedative, tonic, laxative and stimulant. The flowers are used for measles, fevers, and eruptive skin problems. Tea made from dried petals is a laxative, diaphoretic, reduces fever and is used for colds and coughs. It is an aphrodisiac, and cures conjunctivitis and ophthalmia.
  Safflower extract is a tick-repellent, suitable for use in cosmetics, ointments, shampoo, and bath preparations; it is incorporated in anti-obesity agents having lipase inhibitory effects and is also used as an antioxidant suitable for use in pharmaceutical and cosmetic compounds. Safflower oil lowers the blood cholesterol level and is used in cardiac disease treatments.

Safflower helps prevent and eliminate the build-up of uric and lactic acids in the body, which are the leading causes of gout.

Transgenic safflower plants are grown at present to produce human insulin, and safflower-derived human insulin is currently being tested. Seeds are used for tumours, especially inflammatory tumours of the liver. Flowers are considered diaphoretic, emmenagogue, laxative, sedative, and stimulant. In large doses they are laxative, used as a substitute or adulterant for saffron in treating measles, scarlatina, and other exanthema diseases. Charred safflower oil is used for rheumatism and sores, and seeds are diuretic, a tonic and prescribed as a uterine astringent for dysmenorrhoea. The oil is used as a salve for sprains and rheumatism.

Safflower is used for colouring and flavouring foods, in medicines, and for making red (carthamin) and yellow dyes, and a vegetable oil is extracted from the plant's seeds.

- **Other uses**: The flowers' petal powder is used as a food additive. Safflower is an ornamental, food (oil/fat) and fodder plant. Safflower dye is potentially a compound viable natural dye which should be exploited by the textile industry.

  The tea of young shoots, leaves, flowers and fruits is rich in vitamins (carotene), mineral substances, proteins, fats, and carbohydrates.

  Safflower flowers are occasionally used in cooking as a substitute for saffron and seeds are used in birdfeeders. Safflower oil is nutritionally rich and can be eaten as a nutritional supplement, and is used as a cooking oil, in salad dressings, and for the production of margarine. It is also used in cosmetics.

  Edible oil obtained from the seed contains a higher percentage of essential unsaturated fatty acids than other edible vegetable seed oils. The oil is used in liqueurs, candles, and as a drying oil in paints, linoleum, varnishes, and wax cloths. Tender shoots are eaten as a salad and potherb. The seeds are both edible and nutritious, can be eaten roasted or fried, and are used in chutney. The flowers have been the source of yellow and red dyes, and although now largely replaced by synthetics, they are still used in rouge. Dried flowers are used to colour food. Flowers are powdered for rouge-like cosmetics and produce shades of pink to violet. Seed oil is used for soap production and grains are used in fuel. The plant is grown for its seed oil and as an ornamental.

- **Caution**: The plant should not be used by pregnant women.

Another cultivar

- **Arabic name**: Carawya, Carawiya
- **Scientific name**: *Carum carvi* L.
- **Common name**: Caraway
- **Family name**: Umbelliferae / Apiaceae
- **Growth habit**: Herb
- **Life cycle**: Biennial or Perennial
- **Part/s used**: Fruits
- **Chemical constituents**: Caraway fruits contain 3-7% essential oil in which carvone represents 50-60% of the oil. Digestive materials and limonin represent 30%. In addition, it contains 12-25% fixed oil made from oleic acid glycosides (40%), linoleic oily acid (30%), and proteins (30%), and in the fruits are carbohydrate compounds and colouring materials.
- **Pharmacological action**: The plant's fruits are a food flavouring agent. They are used in folk medicine as a cardiac stimulant, digestive, and analgesic for headaches and stomach aches (sedative). They are carminative, antispasmodic, emmenagogue, galactagogue and an aphrodisiac. They are also used for aroma, diabetes, colds and gastric ailments. A fruit decoction is an oral appetizer, an antidote for food poisoning, a contraceptive, purgative and used for skin diseases. It is an antiseptic, a laxative and an antispasmodic. Caraway seeds strengthen and give tone to the stomach, prevent fermentation in the stomach and aid digestion. Their oil is stimulating and a muscle relaxant. Caraway is used in form of hot aromatic sweet drinks, to improve food flavour, as a sedative, to stimulate the digestive system, and to cure intestinal colic in children. It is used for prolapsed uterus, as an emmenagogue, as an aromatic and for diabetes and colds. Fruits are used by nursing women after birth to increase lactation, and as a diuretic and sedative for uterus ailments. Caraway oil reduces rheumatic ailments in joints and muscles. Fruit tea is carminative and traditionally used as a cardiac tonic and for headaches. Seeds are a stomach tonic and prevent fermentation.
  In folk medicine, caraway oil is used in the treatment of gastric and intestine pain, as a tranquillizer for children and to inhibit the growth of microbes. It stimulates appetite and helps digestion, is used in the treatment of the common cold, breast pain and flu, kills parasitic worms and treats incontinence (involuntary urination). It is a heat tranquillizer, used to avoid palpitations and to preserve food stuffs. It relieves flatulence, uterus colics, dental pains, gastric intestinal colics of children and acts as a lactagogue.
- **Other uses**: Caraway is used in the food industry, such as in pastries and cheese. Leaves are used in salads, teas, stews and soups. The seeds are used for flavouring cookies, breads, salads and cheeses, and the roots can be cooked. The oil is used in perfumes, bread and soap.
- **Caution**: The plant causes slight dermal toxicity.

- **Arabic name**: Casuarina, Casurina
- **Scientific name**: *Casuarina equisetifolia* L.
- **Common name**: Beefwood
- **Family name**: Casuarinaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: The bark, leaves and seeds.
- **Chemical constituents**: Casuarinas, tannin, and catechuic acid.
- **Pharmacological action**: It is astringent, laxative, tonic, diuretic and emmenagogue. The plant is a remedy for beriberi resulting from vitamin B deficiency, colic, cough, diarrhoea, skin exanthema, dysentery, headache, nerve ailments, pimples, sores, stomach ache, swellings, and toothache. The seeds are used for passing blood in diarrhoea.
- **Other uses**: The plant is a forest tree, and is used for tanning, desertification, salinity, windbreaks and bridge protection.
- **Caution**: No reports.

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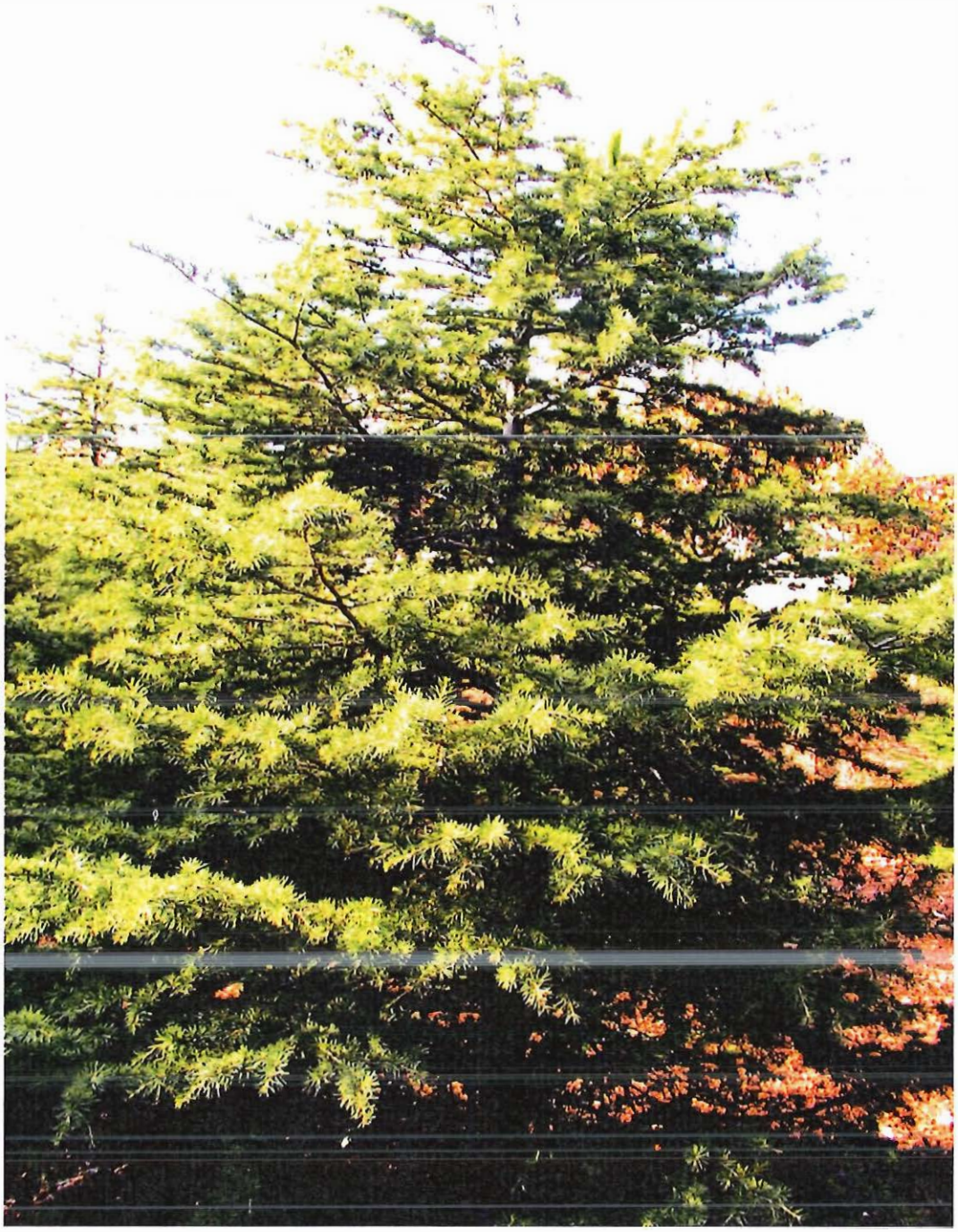


- **Arabic name**: Arz Libnan
- **Scientific name**: *Cedrus libani* A. Rich
- **Common name**: Cedar of Lebanon
- **Family name**: Pinaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Bark
- **Chemical constituents**: Mineral elements including cobalt, barium, copper, iron, iodine, magnesium, manganese, sodium, nickel, phosphorus, silicon, and zinc. Vitamins A, B_1, B_2, B_3 (PP), D and E, auxins (IAA), β-myrcene, β-pinene, borneol, camphor, polyunsaturated fatty acids and quinic-acid. The plant also contains sesquiterpenes, cadalene, calacorene, cedarine, cedrene, cedrol, cis-and trans-10,11-dihydro atlantones, 8, 9-dehydroneoisolongifolene, uijunene, himachalol, isohimachalone, isolongifolenone, limonene, longipinene, oxidohimachalene longifolene junipene, nerolidol, longiborneol, oxydomakalin, satphin, terpinolene, sativene, thujopsene, widdol, wood, cone and leaves oil contain himachalol, alpha and beta himachalol. Leaves are rich in germacrene-D, and, in the cones, alpha-pinene, beta-pinene and myrcene.

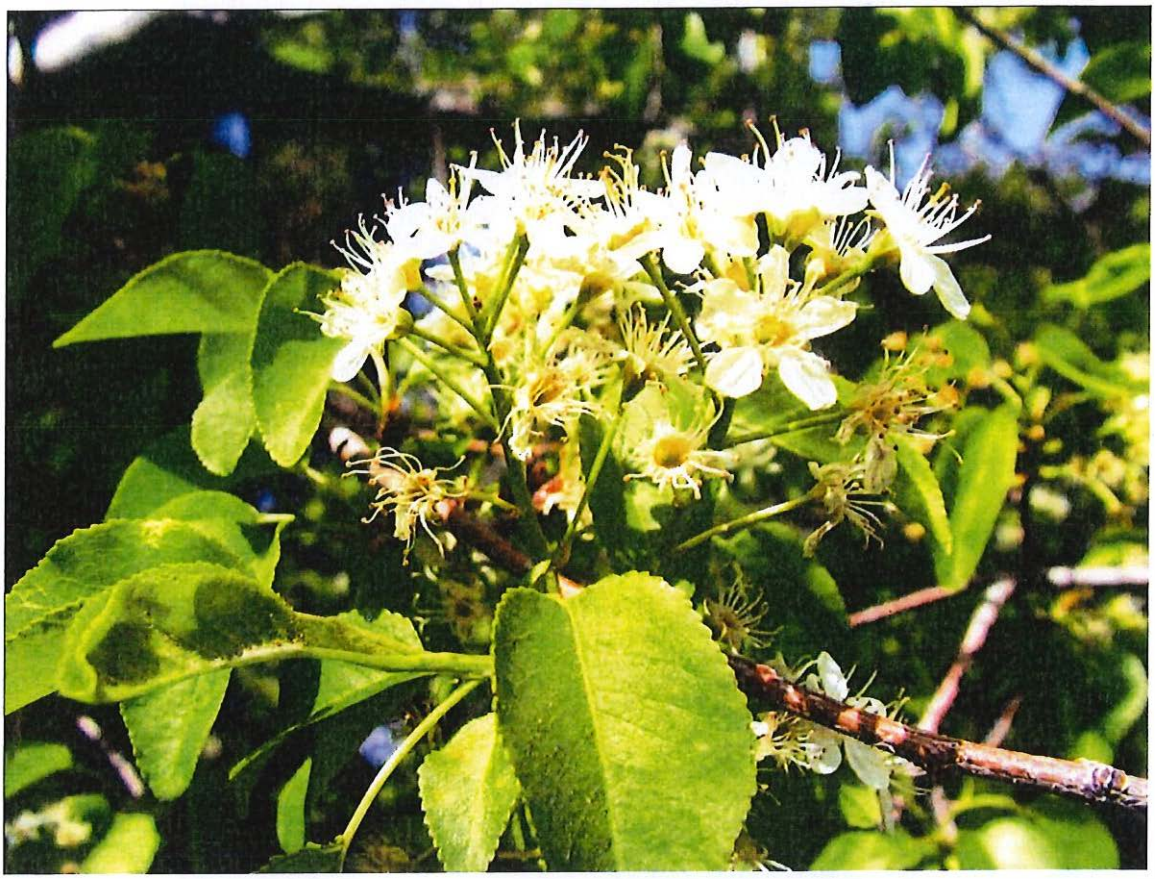
The main constituents in leaves are germacrene D and β-caryophyllene, while in seeds there is α-pinene, β-pinene, verbenol and abietadiene erythroid.

- **Pharmacological action**: Bark powder is placed on wounds as an astringent to prevent bleeding. The sesquiterpenes are antiseptic, killing bacteria and acting as an anti-inflammatory, sedative, and anti-sclerotic. They increase oxygen in membrane surroundings, especially the hypothalamus and the pineal and pituitary glands, and thus increase antibodies, hormones, neurotransmitters and endorphins. They are anti-skin crimps and hydrations and are used in cases of skin and membrane weakness, they are antifungal and anti-sores, and heal wounds in humans and animals when used either internally or externally. The himachlol is anti-allergy and used against dry eczema, haemorrhoids, pruritus (skin itching), dermatitis, acne, alopecia and dandruff. The plant prevents the increase and expansion in k562 cells of chronic myelogenous leukaemia, acts as an antivirus, hypoglycaemic, as a mosquito and tick repellent, is used for diabetics' hormonal cures, and its formulations inhibit the amylase enzyme and therefore are important in cases of acute and chronic pancreatitis.
- **Other uses**: The plant is used for flavouring, as a food and as an ornamental tree on streets and in homes and public gardens.
- **Caution**: When preparing the plant, it should not come into contact with the eyes. Plant extracts must be kept in a safe place with other poisonous materials for use on animals.

- **Arabic name**: Transhah, Qantaryoon
- **Scientific name**: *Centaurea cyanus* L.
- **Common name**: Cornflower, Garden cornflower, Blue Bottle
- **Family name**: Compositae / Asteraceae
- **Growth habit**: Herb
- **Life cycle**: Annual or Biennial
- **Part/s used**: Flowers, seeds, roots and the whole plant.
- **Chemical constituents**: Tannin, sugars, blue dye, mucilage and glucoside.
- **Pharmacological action**: The plant is diuretic and cures nerve ailments, dropsy, hysteria symptoms, and psychological and kidney disorders. The dried flowers are anti-pruritic, anti-tussive, astringent, a weak diuretic, emmenagogue, ophthalmic, very mildly purgative, and tonic. An infusion can be used in the treatment of dropsy, constipation, or as a mouthwash for ulcers and bleeding gums. It is also a remedy for tired eyes and is taken as a bitter tonic and stimulant, for improving digestion, and may support the liver as well as improve resistance to infections. Water distilled from the petals was formerly used as a remedy for weak eyes and as a soothing lotion for conjunctivitis. The seeds are a mild laxative for children. A leaves decoction is anti-rheumatic, and the plant shows antifungal activity.
  In folk medicine, the flower water decoction is used for eye washing, conjunctivitis, ophthalmia, dysmenorrhoea and the disposal of dead embryos. It heals deep and chronic wounds, is useful against snake poison and for phlegm, and is considered as the best drug for liver charges, spleen sclerosis, intestinal ailments, leukaemia, headaches, menstruation and uterus ailments. It stops bleeding, cures diphtheria, and is anti-diarrhoeal, carminative, an appetizer and is useful for halitosis. It also cures warts and rheumatism, is a hair growth stimulant, is anti-scurvy, kills lice and eases birth.
- **Other uses**: Flowers are edible raw or cooked. Fresh florets can be used in salads. They are used as a vegetable or a garnish. A blue ink and a removable dye are obtained from the petals. The dye is edible and used in sugar, confections, linen and hair colouring. The dried petals are used in potpourri in order to add colour. Plant extracts are added to hair shampoos and rinses. The plant is an ornamental and a cut-flower. It is also regarded as a wild flower.
- **Caution**: No reports.

Centaurea sp.

- **Arabic name**: Mahlab
- **Scientific name**: *Cerasus mahaleb* (L.) Mill.
- **Common name**: Mahlab, Perfumed Cherry
- **Family name**: Rosaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Seeds, and bark
- **Chemical constituents**: Hydrocyanic acid and prunasin glycoside.
- **Pharmacological action**: It is anti-diabetic, digestive, carminative and febrifuge. It is used for gout, kidney and bladder stones, face sores, respiratory system disorders, back ailments, colic, heartbeat prevention and dyspnoea, cleans the stomach, and cures liver, kidney and bladder ailments. It protects against chest problems, coughs and itching. It is also used for fever, urinary inflammations and throat diseases. The plant is expectorant, removes bedwetting, and is used as a lotion for scab and face sore removal. It heals fractures, and all plant parts are astringents and deodorants. The fruits are anthelmintic, antiemetic, and febrifuges. The seed is tonic. All members of the genus contain amygdaline and prunasin and toxic compounds at high concentrations. These break down in water to form hydrocyanic acid (cyanide or prussic acid). In small amounts this exceedingly poisonous compound stimulates respiration, improves digestion and gives a sense of well-being.
- **Other uses**: The plant is a rootstock for stony fruit trees and an ornamental aromatic tree.
- **Caution**: No reports.



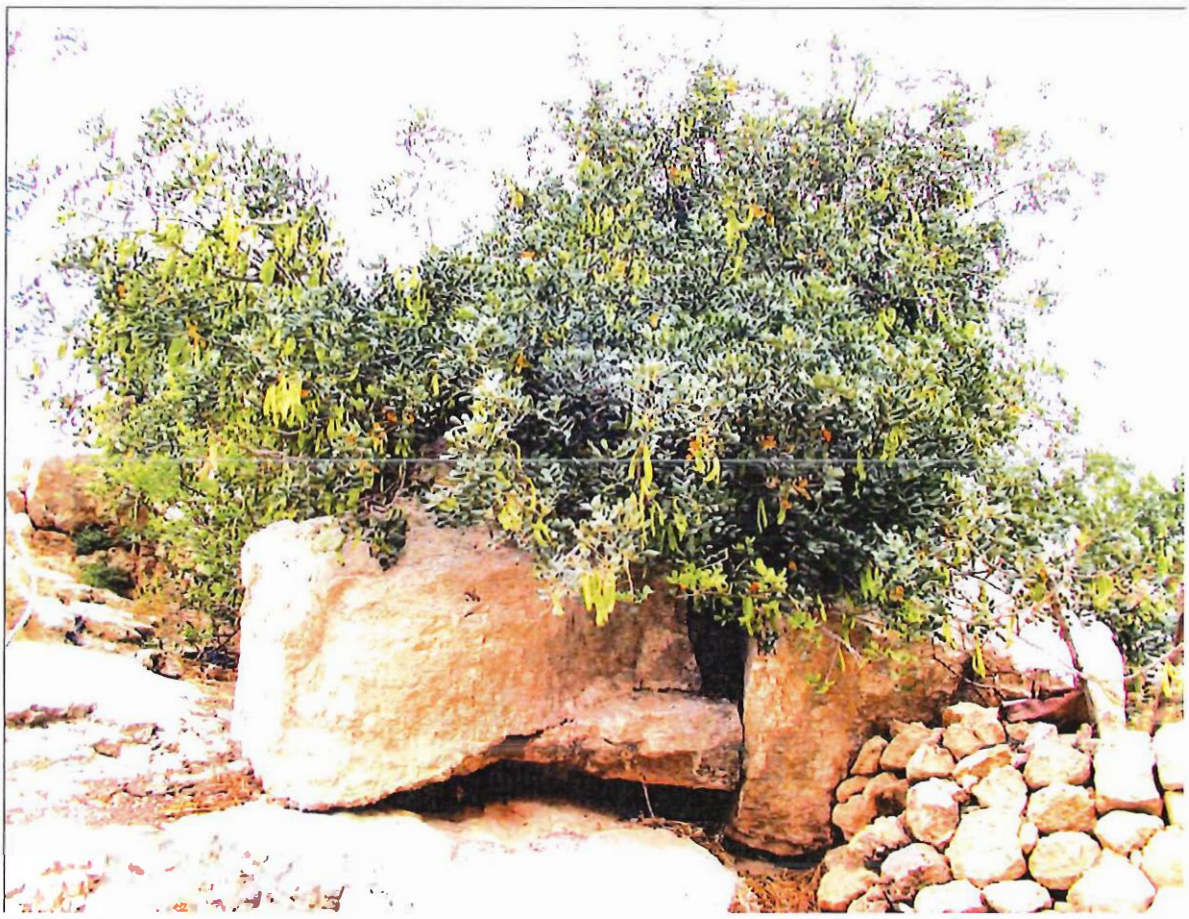
Flowering branch

- **Arabic name**: Karaz Ahmar, Karaz Shai'i, Karaz Adi, Karaz Hamid, Karasia
- **Scientific name**: *Cerasus vulgaris* Mill
- **Common name**: Cherry, Sour Cherry, Morello Cherry
- **Family name**: Rosaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: The bark and root bark, leaves, fruits, and fruit peduncles.
- **Chemical constituents**: Glucose and fructose sugars (15%), pectin (11%), organic acids (citric), tannins, flavones, colouring agents, vitamins B, C, PP, carotene, folic acid, mineral elements (copper, manganese, iron, potassium), amygdaline and prunasin, and substances that break down in water to form hydrocyanic acid (cyanide or prussic acid). Triglycerides contained in seed oil, hydroxyflavone contained in peduncles, oil and gum.
- **Pharmacological action**: Fruits are used for anaemia and act as an expectorant, antiseptic, laxative, sedative, anti-constipation, astringent and diuretic, and high concentrations of iron and calcium salts, tannins, and organic acids are contained in fruit juice. They are also used for indigestion and liver weakness, and are useful for vein sclerosis. The fruit's syrup is used to improve the taste of medicines. A decoction of fruit

peduncles is a diuretic, and is useful for diarrhoea and high blood pressure. Leaves are useful for anaemia; the bark is astringent, bitter and febrifuge. An infusion of the bark has been used in the treatment of fevers, coughs and colds. The root bark has been used as a wash for old sores and ulcers. The seed is nerving. All members of the genus contain amygdaline and prunasin, substances which break down in water to form hydrocyanic acid (cyanide or prussic acid). In small amounts this is a poisonous compound that stimulates respiration, improves digestion and gives a sense of well-being. It is recommended for diabetes patients. Oil is used against warts and rheumatism. It is useful in cases of slow growth, epilepsy, diabetes, arthralgia, bladder and gallbladder stones, intestinal fermentation, and constipation. Seed oil is useful as an anti-rheumatic, and it cures furuncles, skin spots and arthritis.

- **Other uses**: Its fruits are edible fresh, in jam or canned. They are used to obtain a juice with a high nutritional value and are mixed with drugs to improve their taste. Fruits are also used in cakes and pastries. Seed oil is used in soap and extracted seeds as a fertilizer.
- **Caution**: Amygdalin and prunasin substances break down to form hydrocyanic acid in water. In small amounts, this is an exceedingly poisonous compound.

Fruits



- **Arabic name**: Kharrob, Kharnoob
- **Scientific name**: *Ceratonia siliqua* L.
- **Common name**: Carob Tree, Locust
- **Family name**: Leguminosae / Fabaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: A decoction made from the leaves and bark, fruits, seeds, roots and bark.
- **Chemical constituents**: The endosperm gum consists of mannan (58%), galactan (29%), pentosan (3%), proteins (5%), cellulose (4%) and ash (0.8%). It also includes oxidase and keratinase enzymes, as well as nitrogen, fatty materials, glucose, sucrose, manganese, iron, calcium, tannins, isobutyric acid, fibres, anti-oxidants, sugars, fatty acids, vitamins including vitamin A, mucilage, phenolic compounds in wood, and polyphenols in fruits as anti-oxidants.
- **Pharmacological action**: It acts as an astringent, demulcent, emollient, purgative, antioxidant, and anti-cholesterol agent in combination with n-3 fatty acids and carob fibres. Food containing carob fibres and polyunsaturated fatty acids has a positive influence on cardiovascular health. Leaves and pods contain polyphenols of anti-tumour, anti-syphilis and venereal diseases and anti-epilepsy types. It is used for hoarseness and as an emetic, hypoglycaemic, melliferous, stomachic, tonic and a cure for gastrointestinal ailments. The leaves and bark decoction seems to have a soothing effect on epilepsy. The fruits are diuretic and the gum is anti-acidic and anti-diarrhoea. The pulp in the seedpods is very nutritious, rich in sugar, sweet-tasting and mildly laxative when fresh. It helps relieve irritation within the gut when consumed as dried fruits. Seedpods are used in cough treatments, and the seed husk is astringent and purgative. Fruit decoction and impregnate are used for chest ailments and externally in poultices for warts. Carob honey activates the kidney and removes stomatitis, cures skin diseases, and acts as a purgative and appetizer.
- **Other uses**: Dried ripe fruit is edible raw, and unripe fruit juice is a milk coagulant. Fruits are used in food and feed.
- **Caution:** An excessive intake of carob causes constipation, and therefore it should be eaten in moderation.

Floweing plant

Fruits and seeds

Flowering branches

- **Arabic name**: Zamzariq, Khazraj, Sirris
- **Scientific name**: *Cercis siliquastrum* L.
- **Common name**: Judas Tree, Judas Arbre, Red Bud
- **Family name**: Leguminosae / Fabaceae
- **Growth habit**: Small Tree Shrub
- **Life cycle**: Perennial
- **Part/s used**: Flowers and fruits.
- **Chemical constituents**: Phospholipids, fatty acids including palmitic and oleic acid, mucilage, proteins in seeds, flavonoids. Flavonoid glycoside myricitrin and tannin in leaves, ferulic acid in the endosperm, lithospermoside and myricitroside.
- **Pharmacological action**: The plant is an important hypocoagulant, and is very effective for all forms of arteriosclerosis (especially cerebral, hepatic, and renal), whenever the protein and lipid disorders are accompanied by a severe hypercoagulation. This remedy is indicated for Buerger's disease, juvenile arthritis and arterial insufficiency.
- **Other uses**: Leaves, flowers and seedpods may be eaten raw. With a sweetish-acidic taste, they are a nice addition to the salad bowl. Flower buds are pickled and used as a condiment. A natural dye is obtainable from the plant. The plant is an ornamental on streets and in gardens.
- **Caution**: In any exercise or nutritional supplement program, before using this plant or any product during pregnancy, or in case of a serious medical condition, patients should seek medical advice from specialist doctors.

- **Arabic name**: Chrysanthem
- **Scientific name**: *Chrysanthemum morifolium* Ramat
- **Common name**: Chrysanthemum
- **Family name**: Compositae / Asteraceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: Inflorescence and flowers.
- **Chemical constituents**: Pyrethrin 1, pyrethrin 2, resins, and volatile oil.
- **Pharmacological action**: It is anticarcinogenic, antipyretic, anti-toxic, refrigerant, and sedative, improves vision, and lowers blood pressure. It is anthelmintic and a local narcotic for the tongue and lips when eaten.
- **Other uses**: The plant is edible. Pyrethrin is used as an insecticide; the plant is non-toxic for warm-blooded animals unless it enters the blood cycle, when it becomes poisonous.
- **Caution:** Ingestion of the plant may cause some minor symptoms such as rashes, vomiting or diarrhoea, though small amounts may not cause any symptoms. Exposure to juice or sap from plants or a puncture wound from the thorns may produce a skin rash or irritation. Skin wounds can be extremely painful, causing large blisters and skin burns.

- **Arabic name**: Homus
- **Scientific name**: *Cicer arietinum* L.
- **Common name**: Chickpea
- **Family name**: Leguminosae / Fabaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Seed pod, seeds, and leaves.
- **Chemical constituents**: Prenylated flavonoids, acid exudates, in seeds, carbohydrate, protein (24%), ash (2.45%), cellulose (38.5%), sugars, fibre, oil, calcium, phosphorus, protein, iron, thiamin, riboflavin, niacin, ascorbic acid, vitamin K, choline, tocopherol, pantothenic acid, biotin, pyridoxine and inositol. Maleic and oxalic acids. It also contains amino acids (methionine, lysine, cystine, threonine, tryptophan, arginine, glycine, histidine, isoleucine, leucine, phenylalanine, tyrosine, valine, alanine, aspartic acid, glutamic acid, proline, and serine), fatty materials (5.9%), and fatty acids (oleic, linoleic, myristic, lactic, palmitic, stearic, and arachidic). The leaves contain 4-8% protein, saponins and sapogenins. Glandular secretions of different parts consist of maleic and oxalic acids.
- **Pharmacological action**: The plant is useful for the stomach; the fruits are diuretic, an antiseptic for the urinary system, crumble stones and activate the nerves and brain. Seed infusion is a blood, liver and kidney tonic because of its phosphorus content. It is carminative and anthelmintic and alleviates congestion. It is given to children suffering from rickets or general weakness. It is an antioxidant, increases sperm and milk production, provokes menstruation and urination and helps treat kidney stones. Acid exudates from the seedpods are astringent and are supposed to lower blood cholesterol levels. Acid leaf exudates can be applied as an aphrodisiac or for bronchitis, catarrh, cholera, constipation, diarrhoea, dyspepsia, flatulence, snakebite, sunstroke, and warts. Seeds are antibilious. Cooked chickpea-milk mixture (4:1) is used for feeding infants, and effectively controls diarrhoea. Chickpea is the most hypocholesterolemic agent; germinated chickpea seeds are effective in controlling cholesterol levels in rats.

In folk medicine, seed flour in a mixture with honey cures scabies and abscesses and the intake of root decoction cures bile and diarrhoea. A decoction of seeds is useful for smallpox and freckles. Fruits are tonic and stimulants.

- **Other uses**: Chickpea seeds are nutritive, and can be eaten fresh as green vegetables, parched, fried, roasted, and boiled, or as a snack food, sweet or condiment. Seeds are ground and the flour can be used as a soup, to make bread, and are prepared with pepper, salt and lemon as a side dish. Acid leaf exudates can be used as vinegar. Chickpea starch is suitable for textiles, giving a light finish to silk, wool, and cotton cloth.
- **Caution**: It is advised not to be overconsumed by those suffering from a weak stomach. It may of slow poisoning because of the oxalic acid content.

Fruits

- **Arabic name:** Kafour
- **Scientific name**: *Cinnamomum camphora* Nees and Ebern
- **Common name**: Cinnamon
- **Family name**: Lauraceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Dried internal bark of branches and stems, and aromatic oil.
- **Chemical constituents:** Cinnamon oil contains many compounds including camphor, safrol, eugenol, terpeniol, cineole and lignans.
- **Pharmacological action:** The aromatic oil is carminative, and is used medicinally to treat colds, whooping cough, sedative, headaches, and epilepsy, and as a madness sedative. It is useful for rheumatism, arthralgias, influenza, and snuffle when rubbed or inhaled as a vapour. Camphor oil is a muscle relaxant. Its leaves are used for asthma, itching and lung problems. They are an expectorant and antimicrobial. The oil is useful as an antiseptic for respiratory tracts and skin infections.
- **Other uses:** It is a forestry tree, and an ornamental and aromatic plant.
- **Caution**: Sleeping or resting under camphor trees for 4 hours a day may induce impotency and result in a reduction in humans' generation and population growth because of the perfume. The lethal dose for internal use is 6 g while only 1 g is sufficient to kill a child under 2 years old. When used externally, the camphor amount should not be increased to more than 20 g since this constitutes a lethal dose. Camphor oil should not be internally taken in any circumstance because it contains carcinogenic safrol. Pure camphor should also not be used by pregnant women or small kids in any circumstances.

The plant at early stage

- **Arabic name**: Batikh, Batikh Akhdar, Ladi'i, Reqqi, Batikh Shami, Gabbas
- **Scientific name**: *Citrullus vulgaris* L.
- **Common name:** Watermelon
- **Family name**: Cucurbitaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Fruits
- **Chemical constituents**: Water (90%), sugars (6-8%), vitamins A, C and D, and mineral salts, the most important of which are phosphorus and sulfur. It also contains fatty materials, proteins, fibres, lycopene pigment, and nicotinic acid. Oil consists of stearic, palmitic, arachidic, oleic and linoleic acids. Seeds contain protein (27.1%), sugar (15.7%) and fatty materials (43%).
- **Pharmacological action**: The fruit is a coolant, diuretic, and laxative used for constipation, heatstroke and kidney stones. It is hypotensive, laxative and stimulates the body since it is a summer fruit. It is skin and blood cleansing and enhances sexuality. It is useful for freckles; the seeds are diuretic and a laxative, and of benefit in cases of rheumatism. Rubbing with root juice stops bleeding.
- **Other uses**: Fruits are eaten during the summer and thus are refrigerants. The fruit peel is animal feed and the seeds are also used for oil extraction.
- **Caution**: It is advised to be taken between meals and not directly after food. Overconsumption may cause indigestion because of the dilution of stomach secretions.

Watermelon field

Fruits

- **Arabic name**: Laymoon Benzahir, Loomi, Benzahir
- **Scientific name**: *Citrus aurantifolia* (L.) Swingle
- **Common name**: Sour Orange, Lime
- **Family name**: Rutaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Fruits and leaves.
- **Chemical constituents**: Vitamins, especially B and C, a high percentage of stearin and carbohydrates (8.3%).
- **Pharmacological action**: The plant is important for cataracts, colds, fever, chest pains, earache, insect bites, jaundice, thorns, snakebites, stomach ache, toothache, and emotional pains. It cures the respiratory system, acne, asthma, chilblains, dull skin and flu. The oil possesses anti-dermatomycotic activity.
  Traditionally, lime is used as a soothing agent, an astringent and a skin conditioner. It is also used in cases of varicose veins, bronchitis, anxiety and depression. It is effective for most infections, including anaemia, brittle nails, boils, corns, cuts, greasy skin, herpes, insect bites, mouth ulcers and warts. Lime is an antiseptic and helps fight infections and protects the body from viruses. It is useful for fatty scarfskin. The essential oil is a natural deodorant, capable of tightening skin and connective tissue, and is therefore an ideal addition to shower gels and body lotions. It is also a standard ingredient in skin cream. Lime may be used as a carminative and diuretic and helps reduce flatulence. A drink prepared from soaked leaves is sedative and anti-constrictions, and the juice of its fruit is anthelmintic, cures liver congestion, obesity and stomach and intestinal swelling. Lime juice cleans the blood from fats and other blemishes, stops nose-bleeding and cures coughing and respiratory tract inflammations. It is an antiseptic, tonic, anti-scurvy, digestive and stimulant. It is used for liver ailments, intestinal haemorrhages and haemorrhoids, heart palpitations, headaches, convulsive coughs, rheumatism, arthritis, alopecia and deodorants. It is also used for gonorrhoea and relieves stomach pains, as eye drops for eye irritation, nasal bleeding, sinus, nausea and externally as a wound cleanser and for sores. It is taken orally for epilepsy, toothache, flu, arthritis, and to stimulate the appetite. It is effective against ulcers, bruises, infections of the skin and mucosa, ringworm, leucorrhoea, and vaginitis and is also used to treat irregular menstrual flow and to prevent scurvy and dysmenorrhoea. The juice of the fresh fruit is a contraceptive given to both sexes, and is a tonic and anti-diabetic. Juice mixed with oil is given

as a vermifuge. Lime juice dispels the irritation and swelling of mosquito bites and the pickled fruit relieves indigestion.

Poultices of sour orange are placed on the head for neuralgia and are used with arsenic for yaws (a sexual disease similar to syphilis). Fresh fruit is used to help expel sputum.

The leaves cure skin diseases and are used on the abdomen of a new mother after childbirth. Their infusion may be applied to relieve headaches, and the decoction is added to the bath of a feverish patient and used as a mouth wash and gargle in cases of sore throat and thrush, and is also used for child fever and rheumatism.

Root bark serves as a febrifuge, as does the seed kernel. It is ground and mixed with lime juice.

Externally, sour lime is employed for coughs, colds, dengue fever, and throat aches; it is used for fever in infants, period pains, and rheumatism. The fruit is used for childbirth, diarrhoea, fever, infections, skin rashes, worms, intestinal parasites, malaria, and as a digestive and fertility stimulant. Lime is an important antidote and is mainly used for alkaloid-poisoning.

- **Other uses**: Lime juice is used to make syrups, sauces and pies. The fruits are often made into jam and jelly. Marmalade and pickled fruits are used as appetizers. The fruit is a flavour in food and drink and a fragrance in cleansers. The rich flavour and acidic taste make sour lime a favourite for hot and spicy dishes, either fresh or in the form of pickles and sauces. In the kitchen, the essential oil is used in limeade, mixed drinks, desserts, lime juice, lime tea and beverages.

  Dehydrated peel is fed to cattle. The powdered dried peel and sludge are employed for cleaning metal, and the juice in dyeing leather. The juice is a detergent and, as a cleaning material, sour lime juice and arsenic are commonly used together in cleaning the blade of a kris and metals.

  It is also used in cosmetic lotions as a skin conditioner, and the hand-pressed peel oil is mainly utilized in the perfume industry. Lime twigs are popular chew sticks. The oil flavours cola beverages and is used in the perfume industry. The perfume acts like lemon and other citrus oils, and has a nice aroma. A compound containing oils is extracted from plants and has excellent insecticidal activities against mosquitoes, ants, mites, roaches and other insect pests.

- **Caution**: Lime possibly becomes phototoxic upon exposure to sunlight. Like all lemon oils, lime oil can cause skin spots when exposed to sunlight. The intake of large quantities may cause stomach and intestinal ulcers and dissolve internal mucus tissues.

Fruiting young plant

- **Arabic name**: Narinj, Khushkhash
- **Scientific name**: *Citrus aurantium* L.
- **Common name**: Bergamot
- **Family name**: Rutaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Fruit peel, unripe fruits and flowers.
- **Chemical constituents**: Fruit peel contains a volatile oil (1-3%) mainly made from limonin (90-95%), terpinol, linalool, citronellol and others, a glycoside (1-2.5%) of a bitter taste named orantyamarin and flavon glycosides (hesperidin and isohesperidin).
  Immature fruits contain a volatile oil (7%), bitter glycosides of hesperidin (15%), flavonoids, and fruits contain mineral elements (aluminium, barium, cadmium, chrome, copper, manganese, nickel, lead, and zinc). Flowers contain a volatile oil (1%) of a nice smell made from lemonin, and a complex of different ethers of linalool, geranol, and methyl ether of nitranil (0.4-1%).
  The plant generally contains adrenergic amines, flavanones (neoeriocitrin, narirutin, naringin, hesperidin, neohesperidin, naringenin and hesperetin. In addition, synephrine (oxedrine) alkaloids and isoflavonoids are present. Bitter orange leaf oil showed a high content of oxygenated compounds (89.6%), with linalyl acetate (50.1%) and linalool (24.8%) being the main components.
- **Pharmacological action**: The essential oil has antibacterial and insecticidal properties, and is used for the treatment of allergic mastitis and atopic dermatitis. *Citrus aurantium* possesses a suppressive effect against body fat accumulation and helps prevent and treat obesity. Fruit extract inhibits the activity of infection with rotavirus, thereby curing acute diarrhoea and enteritis. Leaves are antispasmodic and sedative. Roots are sedative and antispasmodic, and calm epilepsy, the nervous system and migraines.
  C. aurantium is used for acne, boils, cold sores, eczema, insect bites, oily complexions, psoriasis, scabies, spots, varicose veins, ulcers, wounds, sore throats, thrush, infectious diseases and depression. It has antispasmodic, anti-inflammatory, anti-infectious and antibacterial properties, and also re-establishes nerve equilibrium.
  The volatile oil from immature fruit and flower extracts is used in perfumes and ointments. It is a laxative, diuretic, anti-tumour, and antibacterial, and shows insecticidal properties. It is also used to treat sensitivity in inflamed breasts and arthritis, in perfumes and toothpaste, to cure colds and eczema and as an anti-sclerotic. The plant is used for obesity, as an insect repellent, and as a cure for psoriasis.

Tangerines (*Citrus tangerina*) are calming, sedating, anti-inflammatory, anticoagulant, and help with anxiety, dizziness, and anger.

Floral oil soothes, relaxes, uplifts the spirit and helps maintain confidence. It is excellent skincare oil for ageing, dry, sensitive skin and for scars and stretch marks. It aids in improving sluggish circulation, and relieves tension, stress and anxiety. It is useful for apprehension like stage fright. It can be mixed with rose and jasmine absolute oils, and is antiseptic and emollient.

- **Other uses**: The plant is a natural source of flavourings. Oils from the flowers showed high anti-feeding activity for the 3rd-instar larvae against *Leucania separata*, *Helicoverpa armigera*, *Plutella xylostella* and *Sitophilus zeamais*, causing 100% mortality of *Sitophilus zeamais*. The plant is an ornamental and its fruits can be made into jam.
- **Caution**: Synephrine only has lipolytic effects in human fat cells at high doses. It increases blood pressure, and has the potential to increase cardiovascular events. The entire plant (bark, flowers, leaves, twigs and oil) contains 5-Methoxypsoralen (0.15-0.87%). Rind pressed or cold-pressed essential oil contains trace amounts of the furocoumarin synephrine; an unripe whole fruit contains 2.28 mg/g and the pericarp contains 3.27 mg/g. The aromatic oils and psoralens are toxic. Syngrine influences fatty cells at high doses; it is a hypertensive and may increase cardiac vessel problems.

Mature fruits

- **Arabic name**: Laymoon, Laimoon
- **Scientific name**: *Citrus limon* (L.) Burm. f.
- **Common name**: Lemon
- **Family name**: Rutaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Fruits, leaves, flowers, and aromatic oil.
- **Chemical constituents**: Lemon's fruit bulb represents 60% of the fruit's weight and consists of 2.8% sugar, 4.1-5.9% organic acids, vitamins PP, B, B_1, B_2, B_3, A, C, and mineral elements including iron, calcium, potassium and phosphorus. Fruit peel contains a volatile oil (0.6-2.5%), terpinene, citral, linalool, geraniol and citronellal. The oil is made from about 95% monoterpene hydrocarbons and 2% sesquiterpenes. Limonene (40.9%) is the predominant monoterpenic component followed by linalool (12.2%), geranial (12.1%), □-pinene (10.6%), neral (9.1%), (Z)-□-ocimene (7.3%) and limonene (6.7%). Asparagine-containing beverages are made from citrus fruit skin.
  The fruit peel contains phellopterin, 5-and 8-geranoxypsoralen; lemon oil contains psoralen; 5-methoxypsoralen; 8-methoxypsoralen; 5, 8-dimethoxypsoralen, imperatorin, oxypeucedanin, phellopterin, 5-geranyloxypsoralen. 5-methoxypsoralen 0.0004-0.0087%. Oxypeucedanin 26-728 mg/kg, 5-methoxypsoralen 4-87 mg/kg. 5-Methoxypsoralen 33 mg/kg.1H: Rind expressed or cold pressed essential oil: furocoumarins (psoralen, 5-methoxypsoralen (bergapten) 4-87 mg/kg, 8-methoxypsoralen (xanthotoxin), 5, 8-dimethoxypsoralen (isopimpellin), imperatorin, oxypeucedanin 26-728 mg/kg, phellopterin and 5-geranyloxypsoralen (bergamottin).
- **Pharmacological action**: Lemon beverages may have cell growth-promoting and anti-tumour effects; L-asparagine and nootkatone are contained as an antibacterial agent. Lemon extracts are insect repellents, and its essential oil protects against mosquitoes and is an anti-alcoholic liver-conditioning solution. It has insecticidal activity against mosquitoes, ants, mites, roaches and other insect pests. As an antiseptic, it is used against headaches and fever. Fruit cataplasm, juice, and raw lemon promote leukocyte formation, dissolve cellulite, increase the lymphatic function and promote a sense of well-being. Lemon is also beneficial for the skin, purifies air and water, and removes gum, oil and grease spots.

The oil is used in beauty care. It cleanses, refreshes, cools and stimulates, and is astringent and antiseptic. It is useful for oily skin, lightens dull, stained hands and tones and conditions nails and cuticles. It is a soothing agent. Dried peel cuts are a bitter appetizer, a stomach tonic because of the 2.5% aromatic oil content, and a liver tonic, and are also useful for intestinal gazes and colic. Lemon juice reduces sugar blood levels, and is useful for cold, flu and chest infections; it also reduces stomach acidity, and helps with arthritis, gout, and pharyngitis. The oil induces muscle relaxation and is used for fever and colds. Lemon is useful for protection and remedies because of its vitamin and mineral contents. It is effective against mouth infections and as an antimicrobial, antioxidant, vein astringent, blood coagulant, diuretic, sedative, detoxicant, and tissue remedial. Lemon juice is useful for rheumatism, gout, hypertension, arteriosclerosis, varicose veins and neuralgia. Lemon is used for headaches and fever and the fruit is used in poultices. Lemon and its juice encourage the formation and activities of white blood cells, are useful for skin problems, the disinfection of air and water, and for the removal of gums, oil and fats.

- **Other uses**: Lemons' fruit and juice are used as a refreshment drink with sugar in the summer. The oil is used for beauty, and as a cleaner, coolant, astringent, and antiseptic. It is useful for skin problems, nail treatments and skin soothing and is a narcotic. The oil is also effective as an insecticide on mosquitoes, ants, spiders, cockroaches and other insects. The plant is a fruit tree.
- **Caution**: Lemon is not for use on the skin in direct sunlight. Concentrated oil may cause skin burning, and its overuse may cause tooth decay, vomiting, and stomach and intestinal disorders.

The whole flowering and fruiting plant

plant with mature fruits

- **Arabic name**: Burtukal, Burtqan
- **Scientific name**: *Citrus orange* (L.) Osb.
- **Common name**: Orange
- **Family name**: Rutaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Leaves, fruits, and flowers.
- **Chemical constituents**: Orange contains vitamins A, B and C, and is rich in carbohydrates and volatile oil.
- **Pharmacological action**: Citrus peel extract comprises at least one of the following: oligosaccharides, short peptides, flavonoid glycosides, fatty acids, and triglycerides. Compounds in the peel extract are useful as antimicrobials and fungicides in dermatology. These compounds are important for the treatment of various skin conditions and have also been shown to be useful in preserving food, beverages and cosmetics.
  Orange juice is of nutritional and medicinal value. It treats stomach acidity and digestive disorders, providing the human body with vitamin C, which protects against diseases, especially mouth infections and gum bleeding. An infusion of leaves is a sedative, and is useful for neural system collapse and hysteria. Flowers are used to prepare hot drinks for nerve relaxation before sleep and as poultices for skin sores. The fruit peel contains glands full of volatile oils used in perfumes and drinks and as a stomach tonic. Peels comprise carotene and other active constituents stimulating the digestive system. Orange peel poultices are useful for headaches and other head ailments, and for some nerve problems. Seed powder infusions are useful in treating stomach weaknesses, and act as a tonic, stimulant and appetizer. Orange juice cures all kinds of skin diseases.
  In folk medicine, orange oil is useful in absorbing stomach gases and reducing blood pressure, is used locally for rhinitis and headaches, and is useful for nasal mucus membrane inflammation. It purifies the blood and helps digestion, and is an antioxidant for fresh and vigorous skin.
- **Other uses**: The plant is a fruit tree with nice smell aromatic flowers.
- **Caution**: An excessive consumption of orange fruits is not recommended by medical doctors since it may lead to stomach ulcers. It is also advised that those suffering from hypersensitivity in nerve centres should not use orange leaves. Fruits should be carefully washed before being eaten since most have been treated with insecticides.

- **Arabic name**: Grapefruit, Gryevone, Rambui, Laymoon Janaa, Laymoon Hindi
- **Scientific name**: *Citrus paradisi* Macf.
- **Common name**: Grapefruit
- **Family name**: Rutaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Fruit peel, unripe fruits, and flowers.
- **Chemical constituents**: Auraptene in fruit peel, limonene and paradisiol. Neral, geraniol and citronellal. Fruit bulb contains sugars (4-7%), organic acids (1.5-2.5%), vitamins B, B_1, C, glycoside naringin in peel that gives a bitter taste. Peel: psoralen, 5-hydroxypsoralen (bergaptol), 5-methoxypsoralen, 5-geranylpsoralen (bergamottin). Oil: 5-Methoxypsoralen (0.0005-0.013%), 5-Methoxypsoralen 120 mg/kg. 5Geranoxypsoralen,5-[(6-hydroxy-3,7-imethyl 2,7ctadienyl)oxy]psoralen and 5[(6,7-dihydroxy-3,7-dimethyl-2-octenyl) oxy]psoralen. Grapefruit seed extract has been known to contain the quaternary ammonium compound benzethonium chloride.
- **Pharmacological action**: Its perfume refreshes and uplifts the spirit. A fresh aroma can help with nervous exhaustion. It relieves congested and oily skin, having a toning effect on both skin and tissues. Therefore, it is a good oil to use when treating cellulitis. It is a soothing agent, astringent and skin conditioner. Naringin strengthens blood vessel walls, and grapefruit is recommended for cardiac diseases.
- **Other uses**: It is used as a fruit tree and as an insecticidal compound containing oils extracted from plants, which are excellent against mosquitoes, ants, mites, roaches and other insect pests. The oil is used in perfumes, and fruits are edible and made into jam.
- **Caution**: Grapefruit is not to be used on the skin in direct sunlight. Psoralens are toxic.

Another cultivar

- **Arabic name**: Sejadah
- **Scientific name**: *Coleus forskohlii* Briq.
- **Common name**: Painted Nettle, Flame Nettle, Painted Leaf
- **Family name**: Labiatae / Lamiaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: Roots
- **Chemical constituents**: Rosmarinic acid, forskolin belonging to caffeic acid esters, diterpenoids and anthocyanin.
- **Pharmacological action**: The plant is used to treat cardiac diseases, hypertension, and digestive problems, it improves the absorption of nutrients, is an anti-tumour, aids cardiovascular ailments, and increasingly is used for weight loss since it destroys fatty tissues and prevents the increase in production of the terpenoid called forskolin, the only plant compound known to stimulate the adenylate cyclase enzyme directly and thus increase cellular enzyme production and food metabolism. Studies have shown that the main reason behind forskolin activity is the activation of this important enzyme that elevates the level of cyclic adenosine monophosphate. This enzyme is a cellular regulator and acts as a second messenger, regulating many proteins and their transport through cell membranes, and thus activates many other active cellular enzymes including hormonal activity.

  With increases in adenosine monophosphate, the forskolin showed more benefits on the circulatory system, respiratory tract, digestive system, immune system and on the skin and eyes. Forskolin acts as an inhibitor to blood plates' activity, and therefore lowers the risk of blood coagulation. It increases heart constriction, improves heart functions and as such may be considered as a drug worth using by angina patients and patients of heart congestion and failure. It relaxes smooth muscles and arteries, helps lower blood pressure by the amplification of blood vessels, has immunity effects and activates lymphatic cells, the main reason for melanoma. It was found to inhibit tumour colonies which indicate that the plant may be important and useful in cancer management through metastases. The forskolin works by stimulating the liberation of a thyroid hormone. It ends many symptoms associated with hypothyroidism such as depression, fatigue, weight increase and dry skin. It increases fat metabolism and insulin production. Forskolin lowers the liberation of

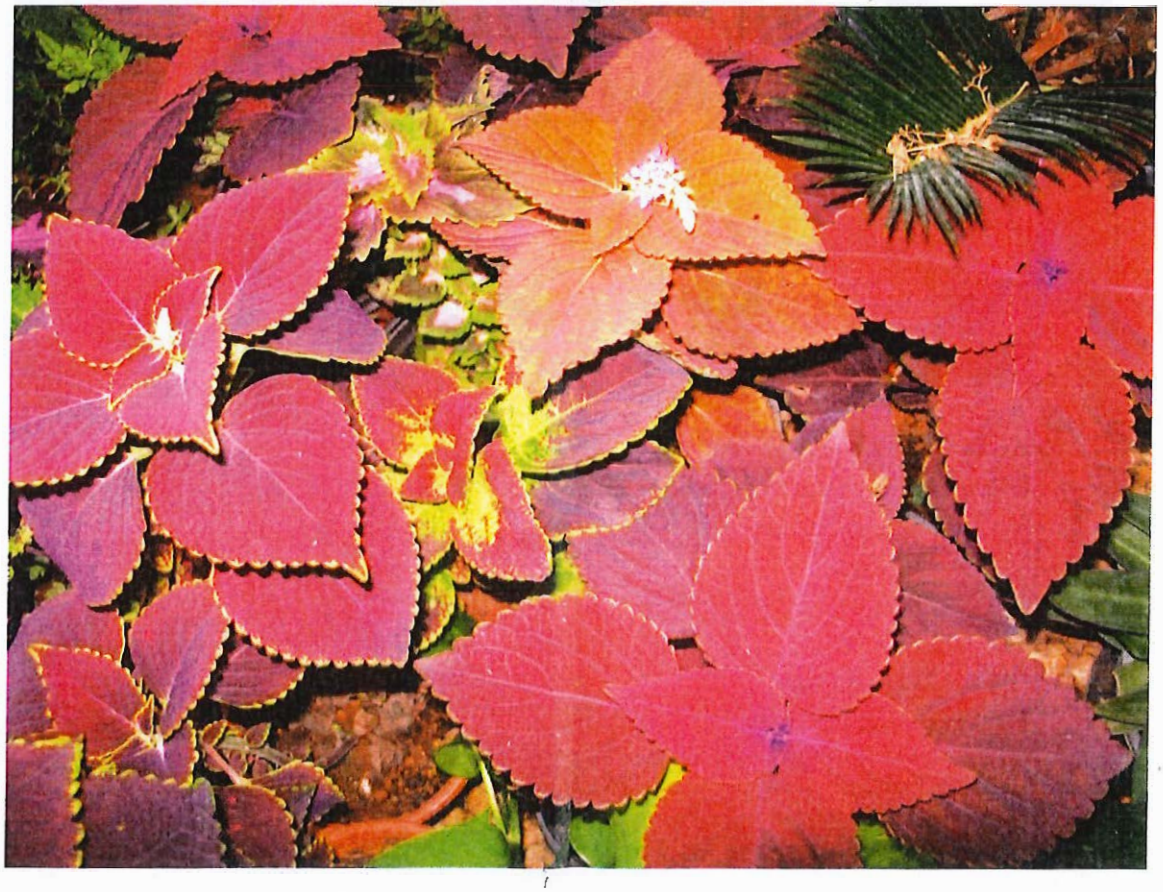
histamine and showed an inhibition on materials controlling inflammation response. It is recommended for the treatment of problems resulting from arthritis including eczema and psoriasis.

The plant is an important herb for asthma since it is an anti-histamine, smoothes muscles and is an anti-sclerotic. It has a specific use for glaucoma by local treatment since it is well-known for reducing intraocular eye pressure, which reduces aqueous humour flux.

Formulations of certain species such as *C. amboinicus* are effective against anti-skin diseases and as a vermifuge.

In folk medicine, the plant is used for weight loss, asthma, and other health problems. Some formulations are used against cardiac diseases, intestinal colic, respiratory system disorder, and lung problems, and it has a camphor smell. Extracts treat muscle tension and reduce blood pressure. The plant is used for abdominal colic, chronic cough, insomnia, convulsions, strangury, epilepsy, fever, haemorrhoids and dyspepsia. Fresh juice is placed around the eye to overcome conjunctivitis. It is believed that forskolin plays the main part in this effect. Forskolin is available as a drug prescribed for hypothyroidism, allergy, asthma, psoriasis, obesity, glaucoma and associated cases with muscle convulsions including spastic colon, hypertension, bladder pain and chest angina.

- **Other uses**: It is an ornamental plant. The tubers of certain species are edible as vegetables and pickles. Leaves of other species are used as spices.
- **Caution**: Although no information is available on plants' drugs reactions, the forskolin's uses contradict blood hypotension and intestinal ulcers; patients use certain prescribed drugs for hypertension and these prevent blood plate aggregation. The plant should not be used by pregnant and nursing women and persons suffering from kidney and liver diseases.



Plants with different leaf colours in the nursery

- **Arabic name**: Mulukhiya, Mulookia
- **Scientific name**: *Corchorus olitorius* L.
- **Common name**: Nalto Jute, Jew's Mallow
- **Family name:** Tiliaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Leaves and seeds
- **Chemical constituents**: Proteins, fats, carbohydrates, fibres, ash and glycosides including strophanthin. It is rich in carotene that transforms into vitamin A, vitamin B, and minerals including iron, phosphorus, calcium, potassium, magnesium, manganese and sodium.
  In seeds, there are the aglycons strophanthidin and corchorgenin, the glycosides corchsularin and olitoriside, the cardiac glycosides corchoroside A and B, corchorolic acid, sitosterol, and a saponin. Strophanthidin and digitoxigenin glycosides (cardiac glycoside), phenolic acids and Ca oxalate-crystal. The jute seed has about 20% jute oils. The fatty acid profile showed an unsaturated fatty acid content of 68% with 27% oxocompounds.
- **Pharmacological action**: Leaves and seeds are a general remedy and healthy food. They are used for cardiac rheumatism and are useful in cases of vasoconstriction and sclerosis. Leaves suppress the elevation of postprandial blood glucose levels in rats and humans, and are an antioxidant; bread has an effect on the treatment and prevention of adult disease as well as diet. Cosmetic compositions containing *Corchorus olitorius* extract are used for retarding skin ageing. Leaves have anti-tumour properties. The unsaturated acids are useful for the treatment of septic shock, hypotension, inflammation, ischemia, allergy, and autoimmune disease. Leaves contain phenolic antioxidants. The plant is a laxative, diuretic, and sedative, is used for bladder stones, helps in cases of blood hypotension, is effective as a hypoglycaemic, aids weak hearts, kidney and urinary tract inflammations, colic, digestive disorders, is a hypertensive and protects against anaemia.

The manganese in the plant helps induce insulin. The plant is a galactagogue, is used for bone decay, and increases the release of sex hormones. Its phosphorus content is important to protect brain cells and memory.

- **Other uses**: It is a vegetable crop, as it contains rich sources of protein, minerals and □-linolenic acid (ALA), and antioxidant vitamins, and thus it could be used for nutritional purposes due to its good nutritional qualities.
- **Caution**: The plant is mentioned as being bad for the stomach. Chemicals of concern or toxicity include corchoroside A and B, cardiac glucosides (Hagers Handbuch), and cardenolide glucosides (erysimoside, olitoriside, corchoroside A, coroloside, helveticoside, cannogenol, periplogenin, digitoxigenin, glucoevatromonoside, deglucocoroloside and evatromonoside). Chorchorin in seeds causes severe diarrhoea if the seeds are taken internally,

The plant in the field

- **Arabic name:** Kuzbarah, Kisbarah
- **Scientific name**: *Coriandrum sativum* L.
- **Common name:** Coriander, Coriande
- **Family name**: Umbelliferae / Apiaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Leaves, fruits and seeds, stem and coriander juice.
- **Chemical constituents**: Antioxidant polyphenols, essential oil (0.7-1.5% of the dried weight). Oil's main components are linalool (77.48%), □-terpinene (4.64%), □-pinene (3.97%), limonene (1.28%), geraniol (0.64%) and 2-decenal (0.16%). Very rich in vitamin C. It also contains tannins, sugars, fatty materials (20%) and proteins (17%).
- **Pharmacological action**: The plant is an aphrodisiac and a sedative, and is used for bladder ailments, gastrointestinal pains, insomnia and rheumatic pains. The essential oil is an analgesic used in herb mixtures for gastric ulcers and stomach cancer. Polyphenolic compounds are effective as anti-mutagenic and antiviral agents.

  The herb mixture is effective against colon cancer and is an immune system tonic. Aqueous extracts are antioxidants, and the essential oils possess antibacterial activity. The herb is used for digestive system disorders, inappetence, pectoral issues and coughs. The oil is carminative, anti-colic, digestive, and important in beauty. It is used in perfumes, supports pancreas functions, and is an anti-inflammatory and restorative. Coriander is an antioxidant; hence it prevents or delays food spoilage. Antioxidant materials are found in seeds and leaves and are more effective in the second. Fruits are used in preparations for haemorrhoids and bile secretions.

  In folk medicine, the herb is used as a stomachic, stimulant, diuretic, and antispasmodic. Seeds' infusion is carminative, cardiac, hypertensive, astringent and used for kidney troubles. It is refrigerant, aromatic, tonic and antiseptic. The juice of the herb is used for dyspepsia, hepatitis, typhoid fever, dysentery, smallpox, nausea, flatulence, vomiting and bleeding piles. Seeds are used in poultices for ulcers and as an eye wash. The oil is useful for pimples, blackheads and dry skin. It lowers glucose levels by normalizing insulin levels, supports the pancreas' function and is an anti-inflammatory. It is used for halitosis, impotence, neuralgia, rheumatism, toothache, abdominal colic, cloudy eyes, dyspepsia, and swellings. It is anti-bilious.

Coriander has been used as a folk medicine for anxiety. Experiments on mice support its use as an anxiolytic and as a treatment for diabetes since its extract has both insulin-releasing and insulin-like activity. Coriander seeds have a significant hypolipidemic effect, lower total cholesterol and triglycerides levels, and increase high-density lipoprotein levels. Coriander juice (mixed with turmeric powder or mint juice) is used in the treatment of acne, if applied to the face as a toner.

The oil is of a sweet-smelling, spicy essence. It relieves stiffness and muscle ache. In the bath it is refreshing and stimulating. The oil is a muscle relaxant, deodorant, and a soothing agent.

- **Other uses**: Fresh young shoots and leaves are used raw or as a salad and food flavouring. The entire plant is edible; leaves and seeds are used in stews and sauces, stems flavour soups and beans, and seeds are used in meat dishes, potpourris and sachets. They are used as flavouring agents in cooking, curries, soaps, and as pickling spices.

  Extracts of volatiles from the foliage exhibit antifeedant activity of *Deroceras reticulatum* (Muller). The plant contains antioxidants in its leaves and seeds, which can delay or prevent the spoilage of food seasoned with this spice.

- **Caution**: Coriander can produce an allergic reaction in some people. Due to its slight toxicity, the oil should be used sparingly. Chemicals that may cause toxicity include the fruit's essential oil (6% camphor) and the herb's essential oil (3-9% camphor).

Coriandrum field

- **Arabic name**: Bondoq
- **Scientific name**: *Corylus avellana* L.
- **Common name**: Hazel, Common Filbert, European Filbert, Harry Lauder's Walking Stick, Corkscrew Hazel, Hazelnut
- **Family name**: Betulaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: The bark, leaves, catkins, fruits and root.
- **Chemical constituents**: Seeds contain water (about 3.5%), oil (62%), protein (14%), carbohydrates (13%), potassium salts (635 mg%), calcium (225 mg%), phosphorus (330 mg%), iron (3.8 mg%), sodium (2 mg%), traces of copper, magnesium, manganese, selenium, and zinc. Seeds also contain vitamin A, vitamin thiamine (B_1 0.04 mg%), riboflavin (B_2 0.5 mg%), niacin (1.4 mg%), vitamin C (3 mg%), vitamin E, alpha-tocopherol, ascorbic acid, folates, and vitamin K as well as phylloquinone, albumin, fatty acids, linoleic and oleic acids. Leaves contain myricetin, caffeic and chlorogenic acids, quercetin, betulin, volatile oil, sugars; fatty and amino acids include alanine, arginine, aspartic acid, glutamic acid, and leucine. The hazelnut is the best dietary nut source of alpha-tocopherol, containing 2 to 3 times more than olive oil.
  The kernels contain about 60% seed oil; the oil contains saturated fatty acids (7%), mono- (78%) and polyunsaturated fatty acids (10%), and phytosterols (0.1%). Its composition, however, varies with geographic origin and roasting the nuts prior to compressing them has little or no effect on oil composition. Oil includes linoleic, linolenic, palmitoleic, and steric fatty acids. It also contains beta-sitosterol, campesterol, and avenasterol, and clerosterol sterols have also been detected, and their concentrations are dependent on the geographic origin and harvesting period.
  Caffeoylquinic acid, caffeoyltartaric acid, coumaroyltartaric acid, myricetin, quercetin, and kaempferol phenols are found in hazel leaves, where tannins also have been identified. Hazelnut shells, a by-product of the kernel industry processing, are reported to contain high amounts of polyphenols including neolignans, and a diarylheptanoid, neolignans, lawsonicin and cedrusin, a cyclic diarylheptanoid, carpinontriol B, and two phenol derivatives, C-veratroylglycol, and β-hydroxypropiovanillone, were the main components of the extract (0.71 %–2.93%, w/w).

❖ **Pharmacological action**: Hazelnuts are rich in proteins and nutrients, are a tonic, and are consumed by anaemic and immune-compromised patients, diabetics and pregnant women. They are recommended to stimulate a student's memory and to improve sleep. The plant is useful for tuberculosis, and for patients of kidney sand and arthritis. The oil is anthelmintic. A branch peel decoction is useful for fever, and a flower decoction is used for flabbiness. A leaves decoction is diuretic and a cure for skin diseases. Dried leaves mixed with walnut leaves, cigarette ash and salt, boiled in olive oil, is a useful cure for rheumatism.

The plant has astringent (root), antipyretic (cortex) and laxative (leaf) properties, while the essential oil is administered for the treatment of helminths, toothache, rheumatism and sciatica. The bark, leaves, catkins and fruits are astringents, diaphoretic, febrifuge, nutritive and odontalgic. The seed is stomachic and tonic. The oil has a very gentle but constant and effective action against threadworm or pinworm in babies and young children.

Hazelnuts are antioxidant (the kernel and green leaf/flower), protective against cardiac morbidity and mortality (nuts), reduce low-density lipoprotein and total cholesterol and increase high-density lipoprotein and triglycerides. The oil is also protective against atherosclerotic plaque formation. The extract could exert an inhibitory effect on the growth of human cancer cell lines A375, SK-Mel-28 and HeLa (IC_{50} = 584, 459, and 526 μg/mL, respectively). It induces apoptosis through caspase-3 activation in both human malignant melanoma (SK-Mel-28) and human cervical cancer (HeLa) cell lines. The cytotoxic activity relies on the presence of neolignans (balanophonin) and phenol derivatives (gallic acid), showing a pro-apoptotic effect on the tested cell lines, and the neolignan cedrusin, with a cytotoxic effect on A375 and HeLa cells.

Polyphenols are useful for the prevention and treatment of cancer, and cardiovascular, inflammatory, microbial, and age-related diseases. Antioxidants are effective against several human cancer cell lines.

Hazelnuts are recommended for use against anaemia, for pregnant women, children and the elderly, and are extremely effective in dissolving kidney stones. The B complex vitamins control metabolism in a synthesis of neurotransmitters, contribute to red blood cell production and stimulate immunity. Hazelnuts prevent obesity and the occurrence of type 2 diabetes. Taxanes have anticancer effects. Leaves' active principles have vasoconstrictor, antibacterial, anti-inflammatory, anti-edematous and healing properties. The seeds' oil is emollient, hypotensive, anti-anaemic and anthelmintic (against tapeworm). The flowers have anti-diarrhoeal properties. The buds are sudorific and astringent, and the bark is a febrifuge and anti-malarial.

In folk medicine, the hydro-alcoholic extract of hazelnut leaves is used against small lesions, the bark against intermittent non-specific fever, the oil to eliminate tapeworms, and the infusion of leaves' powder or their water decoction is used for internal bleeding and acts as a vasoconstrictor. The decoction works well for haemorrhoids and small chronic internal bleedings, and the buds' water infusion acts as a sudorific and an astringent. The consumption of seeds is highly recommended in cases of anaemia since they are rich in minerals. Hazelnut is an adjuvant in treating epidemic hepatitis, consecutive liver failure, asthma, pulmonary emphysema, and silicosis; its water infusion tones liver parenchyma and restores the elasticity of the lung tissue. Leaves' fluid extract is used for the treatment of varicose veins and edema in feet. The plant invigorates the nervous system, is a remedy for diabetics, and is used for kidney patients (nephritic colic, stones), tuberculosis and longevity.

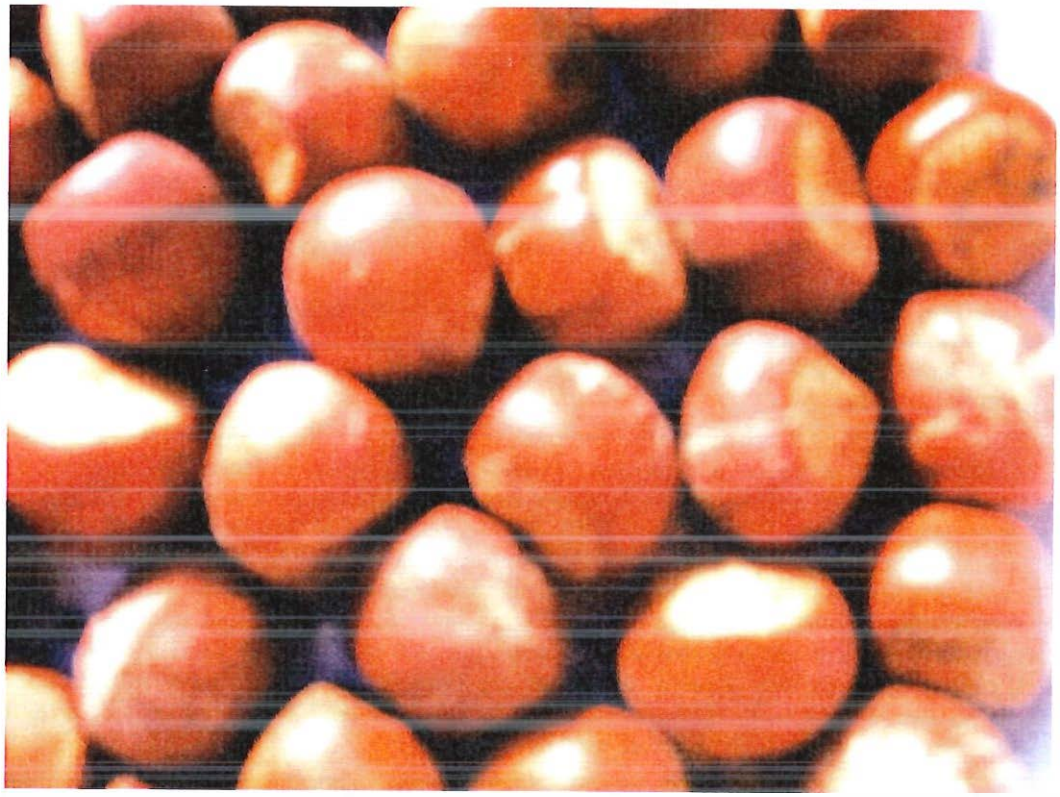
Hazelnuts (raw, roasted, or ground into a paste) are used as a dietary source of protein and minerals. They are a source of vitamin E, unsaturated fatty acids, and linolenic acid.

Externally, hazelnut is used for the treatment of ulcers, periphlebitis, erythrocyanosis of the lower limbs, ringworm and impetigo.

❖ **Other uses**: Hazelnut oil is used in the cosmetic industry as well as in confectionery. It is also edible. Seeds can be consumed raw or roasted and are used in breads, cakes, biscuits, sweets and other forms. The nut is excellent when eaten raw and can also be liquidized and used as plant milk. It is rich in oil. The oil is used in salad dressings, baking and for other food stuffs. The seed contains up to 65% of non-drying oil, which is used in paints, cosmetics and other products. The whole seed can be used to polish and oil wood and can be easily applied and produces a nice finish. Powdered seeds are used as an ingredient of face masks in cosmetics. The lignocellulose shells are used as a heat source, for mulching, and for furfural production in dye manufacturing. Plants can be grown as a tall hedge. The bark and leaves are a source of tannin. The wood is soft, easy to split, not very durable, and beautifully veined. It is used for inlay work, small items of furniture, hurdles, wattles, basketry, pea sticks, etc. The twigs are used as dowsing rods by water diviners. The wood also yields good quality charcoal, used by artists.

❖ **Caution**: The plant's consumption may cause an allergic reaction [urticaria (itching)] and vomiting. Its use requires caution on the part of patients with a known allergy to peanuts, tree nuts or their products. Information regarding safety and efficacy during pregnancy and lactation is lacking. The consumption of hazelnuts is generally recognized as safe when used as a food. No teratogenicity studies specific to hazelnut have been found. A review by the Cosmetic Ingredient Review Expert Panel concluded that there are insufficient data to support the safety of hazelnut oil in cosmetic products. Carcinogenic aflatoxins are possible contaminants of hazelnuts.

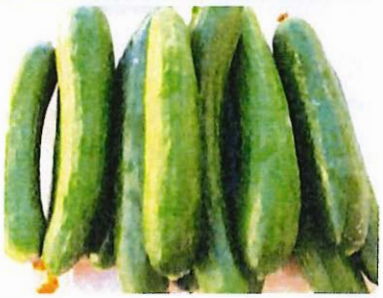
Fruiting plant



Nuts

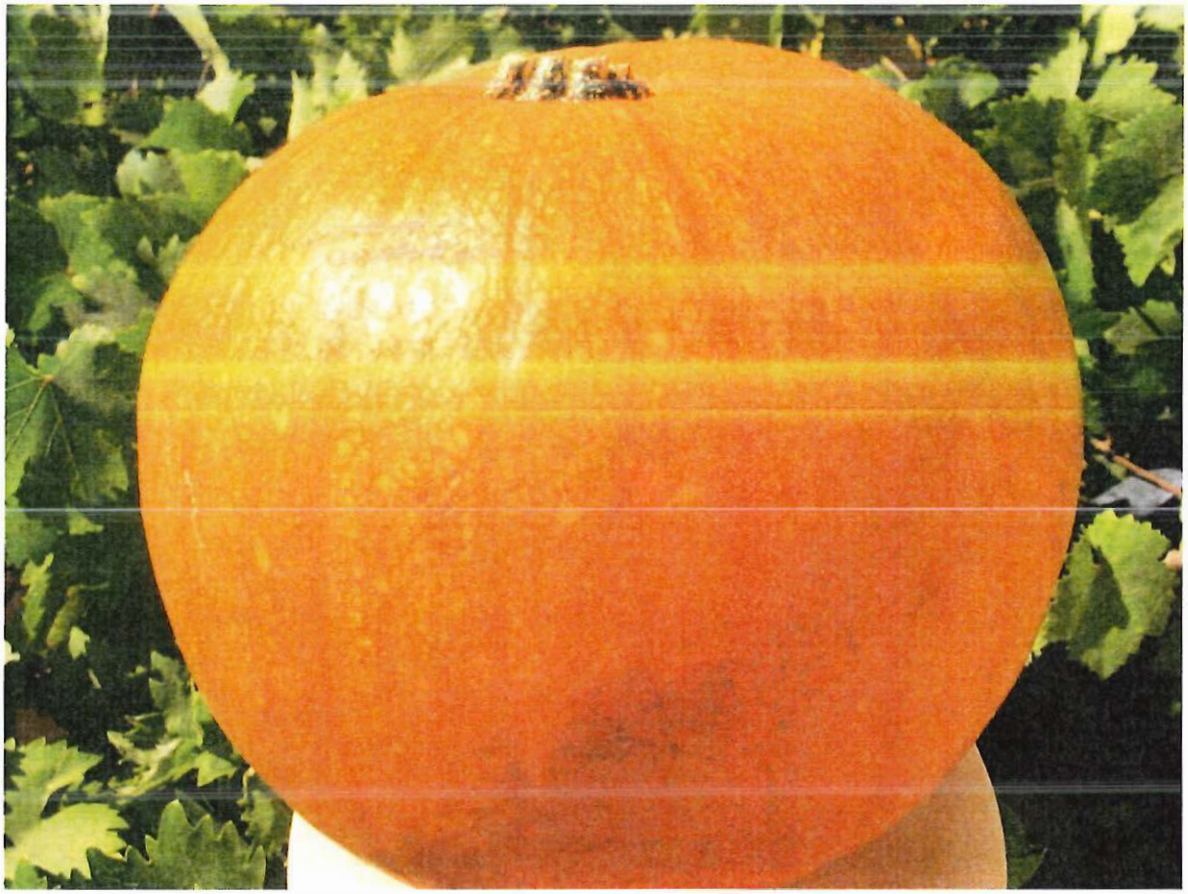
- **Arabic name:** Shimam, Batikh Asfar
- **Scientific name**: *Cucumis melo* L.
- **Common name:** Musk Melon
- **Family name**: Cucurbitaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Roots, pulp, seeds, and kernel.
- **Chemical constituents**: Protein, fat, sugar (6%), fibres, vitamins B, E, and mineral elements including sulfur, phosphorus, chlorine, sodium, potassium, calcium, iron and copper. It is a good source of potassium, vitamin A, and folate. Fruit contains dextrose (1.4 to 2.6%), citric acid, water (92 to 96%), and fat (0.5 to 0.8%). Seeds contain globulin and glutine, arginine, histidine, lysine, cystine, tryptophan, fixed oil, galactan and glucose in seeds. Seed kernels are rich in protein and fat. Oil consists of glycerides of linoleic, oleic, palmitic, stearic and myristic acid, in addition to lecithin and cholesterin. Roots contain nenemetin, potassium malate and pectin. Seed extracts yielded tannins, saponins, phenols, flavonoids, cardiac glycosides, terpenoids, alkaloids, and steroids.
- **Pharmacological action**: Musk melonis is an excellent drug for constipation and repelling waste from intestinal walls. It is used for beauty since it gives flush and flexibility, and may cure leucoderma.
  In folk medicine, the root is emetic, and peduncles are used for anasarca and indigestion and arrest vomiting. The fruit pulp is used as a lotion for chronic and acute eczema, removes tan and freckles, and is internally used for dyspepsia. It is diuretic. Seeds' oil is nutritive and diuretic, and is useful for painful discharges and urine suppression. Kernels are prescribed for stomach cancer and purulent problems of the digestive tract. They are used for menorrhagia after oil extraction. Seeds are used sometimes as an emollient and refreshing medicine
- **Other uses:** It is a summer fruit. Seeds are salted and dried, and the kernels are eaten as a delicacy. Seed kernels are rich in protein and fat, and can be used as a dressing for cakes, bread, confectionery and sweet snack foods. Sometimes, they are used as a substitute for almonds and pistachios. They are also a source of edible oil with the nutritional value of melon seed oil.
- **Caution**: When taken in large quantities it may cause diarrhoea and intestinal rot.

- **Arabic name**: Faqoos, Qitha'a, Mqatti, Ajoor
- **Scientific name**: *Cucumis melo* var. *flexuosus* (L.) Naudin.
- **Common name:** American Cucumber
- **Family name**: Cucurbitaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Fruit and seeds.
- **Chemical constituents**: Iodine in seeds, organic acids, unsaturated fatty acids, alpha and beta-carotene, vitamin K and potassium.
- **Pharmacological action**: Seeds are galactagogue and an aphrodisiac; they alleviate thirst and stomach and liver temperatures. They dissolve stones and kidney sands and dissect tumours. The plant is an emollient, blood cleaner, dissolvent to uric acid and its salts, diuretic, hypotonic, anti-poison, intestinal colic, anti-biliousness and anti-bleeding. It is used in cases of epilepsy, arthritis, colon bacillus, itching and herpes. It is also used for skincare, and, when cooked for face wash, its extract is used with milk as a lotion to remove face freckles and spots.
- **Other uses**: Fruits are edible fresh in the summer; they are also used in fruit salads and may be pickled.
- **Caution**: It can generate gases if taken in large quantities and may lead to side pain.



Fruits

- **Arabic name**: Khyar, Khiar
- **Scientific name**: *Cucumis sativus* L.
- **Common name**: Cucumber
- **Family name**: Cucurbitaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Fruits
- **Chemical constituents**: Cucumber fruits contain almost 96% water, enzymes that facilitate the digestion of fats and proteins, in addition to mineral elements of alkaline reactions that neutralize stomach acidity including sulfur, phosphorus, chlorine, sodium, potassium, magnesium, calcium, iron, zinc, copper and manganese. It contains vitamins A, B_3, B_5, C, K and pro-vitamin A, and organic acids (citric, palmitic, myristic, lauric, oleic and linolenic).
- **Pharmacological action**: Fruits are emollient, purify and clean the face, and make it shine. Cucumber fruit peel is a headache alleviator, and is used for thirst, to calm nerve disorders, as a detoxicant, and as a laxative pickle. The plant is diuretic and cures intestinal congestion. It is emetic, demulcent, purgative, vermifuge, anti-bowel and anti-urinary infections, and kills tapeworm. Slightly sleepy, it dissolves uric acid and is used in skincare and against herpes, severe itching, gout, scabies, conjunctivitis and face congestion and crimps. Overuse is beneficial for diabetic people since it purifies the body from toxins and heals anus inflammation. It is useful for obesity because it is poor in nutrients.
- **Other uses**: It is a vegetable crop, and the fruits are edible fresh, in salads and pickles. Seed oil is used in soap manufacturing, and the plant is also used in animal feed.
- **Caution**: No reports.

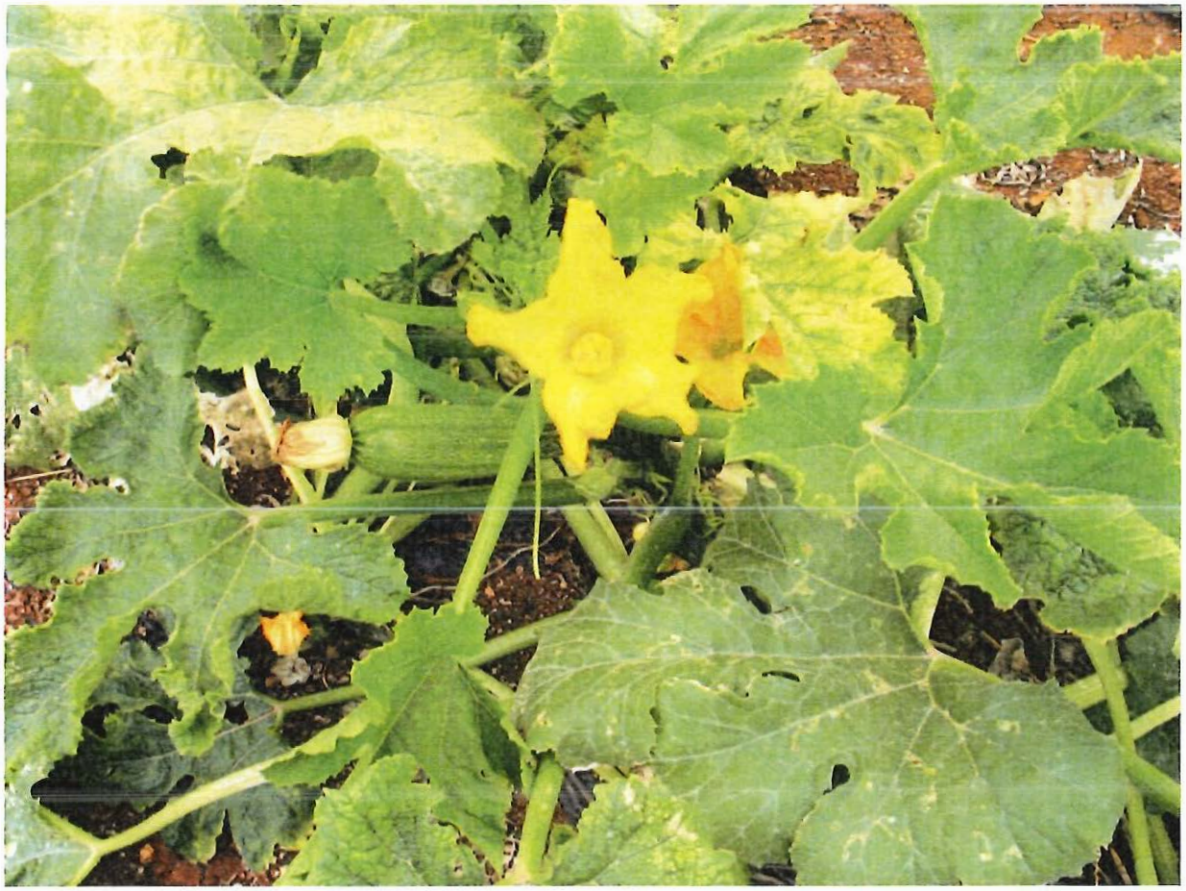


Seeds

- **Arabic name**: Qari'i, Diba'i, Qari'i Asali
- **Scientific name**: *Cucurbita maxima* Duchesne ex Lam. *maxima*
- **Common name**: Pumpkin
- **Family name**: Cucurbitaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Fruits and seeds.
- **Chemical constituents**: Vitamins A, B and C, the amino acids leucine and tyrosin, isoprenoid, cucurbitacin, the resin named piporesin, sugars, protein, mineral elements, and oil of a walnut flavour; it is rich in fatty acids.
- **Pharmacological action**: Fruits are vermifuge, and are used against head lice and worms. They are also used to obtain salts, are anti-emetic, digestive and sedative. The oil is a skin laxative, and is used for wounds and to protect the skin against UV light. It is a body nourishment, relieves headaches if drunk or used as a head washer and a laxative. It is used for burns and inflammations, as well as for sores, impotency, urine tract inflammation and edema. It is also used for benign prostatic hyperplasia and expels intestinal worms. Fruits are diuretic, and the pulp removes urine burning, sores and bladder sores, and cures haemorrhoids and leucoderma. It is a laxative, used against burns, inflammations, and furuncles and for insomnia. The plant has been proven to stimulate the memory and brain, and this is important for thinking and brain activities. The encephalic stimulant is of great influence in stimulating the brain and its growth, increasing cleverness and brain bioactivity. Seeds kill internal worms and, when used with cucumber and musk melon, cure sexual weakness.

  In folk medicine, seed oil is usually gently applied in few drops on the skin and massaged in as a skin emollient. It is an antioxidant used for skin care, wound healing, skin protection against UV light, and a cure for prostate swelling.
- **Other uses**: Fruits are edible in jams. Seed oil is excellent in food, and seed husks and seeds are used in bird feed.
- **Caution**: No reports.

Different cultivars of *Cucurbita moschata*



- **Arabic name**: Kussa
- **Scientific name**: *Cucurbita pepo L.*
- **Common name**: Squash
- **Family name**: Cucurbitaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Fruits and seeds.

Fruits

- **Chemical constituents**: Fruits contain almost 8% sugars, starch, proteins, and mineral elements including sulfur, phosphorus, potassium, calcium, iron and manganese. It contains elaterin A, vitamins B, B_2, and C, nicotinic acid, and carotenoids. Vitamin C present in leaves; seeds contain fatty oil (50%), made from glycerides of linoleic, oleic and palmitic acids, wax, resin, cucurbitol, organic acids, vitamins B_1 and C, carotenoids, and flowers contain flavenoids and carotenoids. In seeds are leucine, tyrosine, peporerpin and vitamin B.
- **Pharmacological action**: Squash fruits are a cooling food and are useful in diets; they cool down burning, and are a laxative and anti-poison. Cooked fruit pulp is a diuretic, and expels water from the body. Mature seeds are anti-inflammatory and expel worms, either fresh or dried. An infused seed embryo is used to cure prostate swellings and skin diseases and is antiemetic for pregnant women. Fresh fruit juice is a mild diuretic and is sometimes recommended for urinary system disorders, dysentery and constipation. Externally, it is used as a poultice on burns and inflammations.
- **Other uses**: A vegetable crop.
- **Caution**: There is a possible presence of the toxic tetracyclic triterpenes cucurbitacins. Fruits of cultivated squash and other pumpkins have been cultured to be "free of cucurbitacins", and are assumed to contain a suppressor gene or a mutation responsible for the absence of cucurbitacins. However, back-mutations occur randomly, which may lead to plants with toxic and bitter fruits.

- **Arabic name**: Kammon, Snoot
- **Scientific name**: *Cuminum cyminum* L.
- **Common name**: Cuminum, Cummin
- **Family name**: Umbelliferae / Apiaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Fruits
- **Chemical constituents**: Cuminal (36.31%), cuminic alcohol (16.92%), □-terpinene (11.14%), safranal (10.87%), p-cymene (9.85%) and □-pinene (7.75%) are the major components. Sesquiterpene lactone glucosides and alkyl glycosides are contained in cumin fruit. It also contains monoterpenoid glucosides.
  The fruits also contain essential oil (2.5 to 4%) consisting of cumin aldehyde (25 to 35%), perilla aldehyde, cumin alcohol, α-and β-pinene (21%), dipentene, *p*-cymene and β-phellandrene, carvone, terpinene, anithol, limonin, pyrazines and various alkyl derivatives (particularly, 2,5-and 2,6-dimethyl pyrazine), 2-alkoxy-3-

alkylpyrazines (2-ethoxy-3-isopropyl pyrazine, 2-methoxy-3-*sec*-butyl pyrazine, 2-methoxy-3-methyl pyrazine). It also contains a sulfur compound and 2-methylthio-3-isopropyl pyrazine.
Distilled fruits residues contain fixed oil (10%), proteins (17-20%), carbohydrates (27%), tannins, resins and phenols.

- **Pharmacological action**: Fruits are carminative, astringent, emmenagogue, stimulant, stomachic and galactagogue. They are used for dyspepsia, diarrhoea, gastrointestinal pains, abdominal colic, and nosebleeds. They are also used for asthma, dermatitis, dysentery, convulsion, stomach disorder, colon inflammation, gonorrhoea, impotence, syncope, and tachycardia and as a veterinary medicine and spice. The oil has potent antimicrobial or fungicidal activities and is an antioxidant. Cumin aldehyde or extract is an anti-diabetic therapeutic. A sharp, spicy aroma may be used for mental or physical exhaustion. It could stimulate the metabolism of those who are obese and/or have excessive fluid. Mature fruits or oil are used as a diaphoretic and intestine colic sedative. Cumin fruits are muscle relaxants, diuretics, increase digestion secretions and are useful in curing acidity.
  In folk medicine, cumin oil has a spicy taste and a very penetrating smell. It is effective in reducing headaches, and helps in relieving muscular pains and osteoarthritis and the nervous system. It is a tonic and has a beneficial effect on headaches, migraines and nervous exhaustion. It is also used for massaging the legs, thighs, behind the ears, neck and stomach. Cumin is useful as a warming oil in the digestive system.
- **Other uses**: Cumin powder is one of the important spices added to many food materials as an appetizer, as it gives a specific taste and smell. Cumin volatiles have intimate activity. The oil is used in the food industry (cheese, pickles), canned food and beverages, ground spices and in bakery snacks. The volatile oil is used in perfumes.
- **Caution**: It may be slightly photosensitizing or irritating to some skins. Chemicals of much concern are the estragole content (30ppm (fruit) 1H), the essential oil from the fruit, and eucalyptol (0.2-0.4%).

Fruiting stage

- **Arabic name**: Siriew
- **Scientific name**: *Cupressus sempervirens* L.
- **Common name**: Cypress, The Mediterranean Cypress
- **Family name**: Cupressaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Aromatic oil from the needles and twigs of young branches, female flower cones, and fruits.
- **Chemical constituents**: Essential oil in branches made from hydrogenic-coal terpenes. Its main components are a-pinene, camphene, sabinene, b-pinene, d-3carene, myrcene, a-terpinene, terpinolene, linalool, bornyl acetate, cymol, limonene (1.4-8.7%), 4-terpinyl acetate (0.8-4.5%), cedrol, cadinene, flavonoids and

biflavonoids. In addition, the cones contain tannic acid, parasimol, camphor, falerian acid, ferferol, camphene, terpinol, tannins and flavonoids.

- **Pharmacological action**: The plant is used for decongesting the circulatory and lymphatic systems, and may help with edema, cellulite, and varicose veins. Its oil is astringent, antiseptic, antispasmodic, deodorant, diuretic, haemostatic, hepatic, styptic, sudorific, a vasoconstrictor, a respiratory tonic, a sedative, antiradical and antimicrobial.

  Branch smoke is a bug repellent, and branch ash is used for skin burns and strangury. Cone macerations are used for haemoptysis and asthma, and cone extract is used in hair colouring. Roots ground in vinegar are used as a hair tonic paste and dye, cure leucoderma and give hair a black colour. Fresh leaves are used in a bandage for a hernia. Cooking it with vinegar alleviates toothache and is useful for eye swellings. Its fruit drink is a cure for dyspnoea, weak erections, chronic coughs and intestine and stomach sores, and its gum for wound healing, anti-bleeding, against dry sores and destroying tumours. It is a cure for haemorrhoids and leaves cooked with fruits is a black hair dye, anti-alopecia, a remedy for bladder complaints and prevent bedwetting. Soft fruits are an eyelid and stomach tonic.

  Oils are of excellent insecticidal activity against mosquitoes, ants, mites, roaches and other insects, and are arrestants and repellents for neonate larvae of codling moths.

  The perfume fragrance refreshes, restores and tones. It is useful for refreshing and caring for oily and blemished skin, is an antiperspirant and good for sweaty feet. It is used in massages on the abdomen during menstruation and in cases of cellulitis. The oil is a natural deodorant, soothing agent and skin conditioner. Externally, it is used as a lotion or aromatic oil to constrict varicose veins and haemorrhoids, and to contract blood vessels. Cones' plunge is used for foot cleaning and excessive perspiration. Internally, cypress is an anti-convulsive, general tonic, prescribed for coughs (whooping) and spastic coughs, and is useful for colds, influenza, and pharyngitis. Leaf powder cures chest pains and coughing. Cypress removes congestion of the circulatory and lymphatic systems, helps with dropsy and is an antimicrobial. The oil is astringent and antiseptic, anti-convulsive, diuretic, a liver stimulant and a curative. It is effective against radicals and analeptics.

  In folk medicine, the oil is used as an aromatic and as a cream to relax haemorrhoids. The resin is used for bowel troubles and anaemia.

- **Other uses**: The plant's oil is an insect repellent and insecticide. Essential oils may be used in grain storage against insects. The plant is also used in the paper industry.

- **Caution**: Eating from the plant, especially in large amounts, is expected to affect major body organs such as the liver, heart and kidneys. The oil is flammable, and is never taken internally. Toxicity symptoms include general feebleness, loss of condition, and causes cows' abortion and death. Cones may be the part of concern. Chemicals of possible toxicity in the fruit are in the essential oil, the main components of which are alpha-pinene (53.56%), alpha-terpinene (18.90%), thymol (3.84%) and terpinolene (3.15%), and leaves' phenolic compounds (cupressuflavone, amentoflavone, rutin, quercetin, quercitrin, myricitrin, comosiin, caffeic acid, *p*-coumaric acid).

Cv. pyrimidalis

Fruit

- **Arabic name**: Safarjal
- **Scientific name**: *Cydonia oblonga* Pers.
- **Common name**: Cydonium, Quince
- **Family name**: Rosaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: The stem bark, seeds and unripe fruits.
- **Chemical constituents**: The seed contains 20% mucilage and 15% fatty oils. The fruit is composed of vitamin A, IU protein, vitamin B_1 (thiamin), vitamin B_2 (riboflavin), vitamin C, fat, carbohydrate, calcium, phosphorus, potassium, sodium and it is rich in pectin. The leaves contain 11% tannin and pectin. Flavonol glycosides, □-Ionol-derived glycosides, tetracyclic sesterpenes, mucilage and amygdonitrile glucoside are in leaves.
- **Pharmacological action**: The fruit is anti-vinous, astringent, a cardiac tonic, carminative, digestive, diuretic, emollient, expectorant, pectoral, peptic, refrigerant, restorative, and a stimulant and tonic. The fruit and juice are used as a mouthwash or gargle for mouth ulcers, gum problems and sore throats. The syrup of unripe fruits is anti-diarrhoeal. The seed is a mild laxative, astringent and anti-inflammatory, and has a soothing and demulcent action when taken internally and is used for respiratory diseases. Mucilage is used for minor burns. The stem bark is astringent and used for ulcer treatment. The leaves are astringent, sedative, cure fever and their tannin may protect the body against radiation. Pectin benefits the circulatory system and helps reduce blood pressure and haemostasis. Fruit wine and cider are anti-asthmatic. Fruit infusion is used in sore throat, diarrhoea and bowel haemorrhage treatments. It is also effective against gastroenteritis. Fruits are also used in the cosmetic industry and medicinal cosmetics.
  Externally, quince cures breast and cleavage irritability, all skin chaps and anus lapse. Flower impregnates relieve coughs and whooping cough.
- **Other uses**: It is used as a flavouring in apple pies, ices and confections. Quince pectin is used in jelly and pastry, the seed coat mucilage is used as an Arabic gum substitute to add gloss to a material, and leaves' tannin can be used for tanning.
- **Caution**: Seeds are poisonous when taken internally.

- **Arabic name**: Hashishat Al-Laymoon, Hashishat Al-Esqarboot, Oshbat Al-Laymoon
- **Scientific name**: *Cymbopogon citratus* (DC.) Stapf.
- **Common name**: Lemongrass, Oil Grass
- **Family name**: Gramineae / Poaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: Leaves
- **Chemical constituents**: Aromatic oil (0.2-0.5%) has a lemon smell, rich in citral (representing 80-90%), obtainable vitamin A, citronellol, citronella, myricene, limonene, geraniol, geranilol, traces of HCN, a compound similar to insulin, alizol, carvone, ecogen derivatives, geranial (49.5%) and niral (38.2%). In addition, the plant contains alkaloids, flavonoids, saponins, tannins, phenols and quinone.
- **Pharmacological action**: The plant is antiseptic, an insect repellent, a perfume, antibacterial, a radical scavenger and antioxidant. It has cytoprotective and anti-inflammatory properties. Oil citronellol may possess antihypertensive properties and lower blood pressure in rats. Tea is an inexpensive remedy treatment for oral thrush in HIV/AIDS patients, and a pain reliever. A leaves decoction is used for headaches and toothaches. It is an antiseptic, insect repellent, gives a lemon smell to food, anti-cold, removes intestinal colic, stomach pains, and reduces rheumatism and neuralgia disease ailments. Its oil is anthelmintic, used in the perfume industry, antibacterial, antioxidant, tissue protective and an anti-inflammatory. Oil mixed with fresh coconut oil is used in folk medicine. Plant water essence is a component in skincare products such as lotions, creams and facial cleansing toner. A mixture of lemongrass oil with virgin coconut oil is used in aromatherapy. The oil is also used for the treatment of oral or vaginal candidacies. Citral inhibits both mycelial and yeast-form growth. It is an antiseptic and astringent. Its sweet, powerful aroma makes a good refreshing and deodorizing room fragrance, as well as an insect repellent, skin conditioner, soothing agent, muscle relaxant and deodorant.
- **Other uses**: The oil is refreshing, cleansing and stimulating, a body tonic, and is added to shampoos to aid in adding shine to the hair. It is an insect repellent and has an insecticidal function against mosquitoes, ants,

mites, roaches and other insect pests. It also has fungicidal and anti-aflatoxigenic effects. Lemongrass is an essential ingredient in many dishes. Pieces can be broken off at the base of the clump for cooking. The white fleshy sheath at the base of the reed is the part that gives a sharp lemon tang to soups and stir-fry. Oil spray is an alleviator and aromatizes rooms' environments. The oil is added to insecticide containers to hide the kerosene smell and water distilled from plants is used in colognes and perfumes. The oil is also used in the low-cost perfume industry for soap and toilet soap, beauty care, insect repellents (mainly for mosquitoes), and for antifungals and anti-aflatoxins. Leaves, after the oil's extraction, are a source of paper production and industrial cellulose. The plant is used in agriculture as a sand soil stabilizer.

- **Caution**: A high oil concentration in a bath may irritate the skin.

In the field

- **Arabic name**: Ardi Shawki, Hurshuf, Khurshuf, Khurshoof
- **Scientific name**: *Cynara scolymus* L.
- **Common name**: Artichoke, Cardoon, The Globe Artichoke
- **Family name**: Compositae / Asteraceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: Aerial parts, green leaves, flowering heads and inflorescence heads before opening.
- **Chemical constituents**: The closed inflorescence and surrounding scales are of high nutritional value. It contains apigenin, luteolin, polyphenol oxidase, sesquiterpenoids, cynarases, phenolic compounds, caffeoyl esters, flavonoidic compounds and flavonoids and carbohydrates (6-15%). In the closed head, there is protein (3%), carotene, vitamins A, B and C, mineral elements including salts of manganese, phosphorus, calcium and inulin. Leaves contain the bitter aromatic cynarine (0.02-0.03%).
- **Pharmacological action**: The inflorescence is used for diabetes; the plant is an antioxidant, appetizer, helps digestion, cholagogue, choliokinetic, a detoxifier, depurative and diuretic. It is hepatoprotective, a blood cleaner, hypotensive, stimulant, and tonic, has an antimicrobial function, inhibits cholesterol biosynthesis and raises the HDL/LDL ratio. Leaf extract is used to treat malabsorption diseases and gastroenteritis, and is helpful for functional dyspepsia, anti-allergics and health foods. It treats gall bladder, kidney and liver disorders including hepatitis. It is hypoglycaemic and antisclerotic. Leaves' fresh juice is externally used to treat some skin disorders. Artichoke seems to have a bifidogenic effect on beneficial gut bacteria. Boiled leaves are useful for liver diseases and congestion, nephritis, arteriosclerosis, and diarrhoea. The plant's materials cure most cholesterol-caused diseases, and are useful for obesity, skin sores, haemorrhoids and kidney stones. It is an antioxidant and anti-dyspepsia. Leaf extract cures the circulatory system, blood, and kidney and liver diseases.
- **Other uses**: The plant is a vegetable crop and is used in soap.
- **Caution**: Artichoke is prohibited for rheumatism, arthralgia, gut, weak urine tracts and hypersensitivity patients. It is preferably used in a fresh form in order to avoid the loss of useful materials, and should be

taken directly after being cooked because some of its materials may be oxidized and transformed into toxicants. It reduces lactation.

Heading stage

- **Arabic name**: Jazzar
- **Scientific name**: *Daucus carota* L.
- **Common name**: Carrot
- **Family name**: Umbelliferae / Apiaceae
- **Growth habit**: Herb
- **Life cycle**: Biennial
- **Part/s used**: Roots, seeds, and the whole plant.

Roots

- **Chemical constituents**: Tuberous roots contain sugars (4.5-7.3%), carotenoids (provitamin A) (6-14 mg%) (carotene, phytoene, lycopene and others). The root contains vitamins B_1, B_2, B_6, B, C, K and PP, salts of calcium, phosphorus, iron and micronutrients, fatty oil, coumarins, umbelliferon, daucarin alkaloid and pectines.
  Seeds have a volatile oil made from pinene, limonene, cineol, geranyl acetate, flavone compounds and a fixed oil (up to 13%). Flowers contain flavonoid compounds, and anthocyanin and daucarin are in the seeds.
- **Pharmacological action**: The whole plant is used to treat kidney complaints and gastric ailments. It is diuretic, anti-lithic, carminative and antifungal. Seed oil is an antioxidant and radical scavenger. Fresh carrot, particularly the carotene, affects the keenness of sight and the ability to see in dim light. It is an anthelmintic, diuretic and stomachic. It is effective for infants' digestive ailments and tonsillitis. A carrot diet alleviates cancer pain. The plant is used for anorexia, flatulence, colic, worm infestation, diarrhoea, heartburn, hyperacidity, cough, asthma, nyctalopia, myopia, tumours, haemorrhoids, diabetes and jaundice.
  Roots are used in cases of vitamin A deficiency, since they cure the resultant skin diseases. It is effective against bladder and kidney stones, and is diaphoretic and an excellent antioxidant. It also helps to protect against cancer diseases and ageing.
  In folk medicine, seed oil is used in removing toxins and water build-up in the skin, giving it a fresher and more firm appearance. It is effective as a muscle relaxant and vasodilator and carries properties of vitamin A.
- **Other uses**: It is a vegetable crop. Carrot roots may be made into jam or sweets.
- **Caution**: Carrot juice can be toxic if taken in excessive amounts as it induces hypervitaminosis A.

A carrot field

- **Arabic name**: Poinciana, Goldmore
- **Scientific name**: *Delonix regia* (Hook.) Raf(Syn. *Poinciana regia* Boj. ex Hook.)
- **Common name**: Royal Poinciana, Mexican Tree, Royal Poinciana, Flamboyant, Flame Tree, Flame of the Forest, Gold Mohar, Gul Mohar, Julu Tree, Peacock Flower.
- **Family name**: Leguminosae / Fabaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Leaf, root, flower, and bark.
- **Chemical constituents**: Phenols and flavonoids in flowers, sterols (stigmasterol, ß-sitosterol, and its 3-O-glucoside), a triterpene (ursolic acid) and four flavonoids (quercetin, quercitrin, isoquercitrin, and rutin), and an amino acid in extract. Seeds contain glucomannan and mucilage. Leaves contain β-sitosterol, lupeol and tannins. Sterols, phenolic compounds, triterpenoids, and flavonoids. Flowers yielded saponins, flavonoids, carotenoide, tannins, steroids, alkaloids, and ÃŸ-sitosterol. Bark yields ÃŸ-sitosterol, carotene, hydrocarbons phytotoxins, saponins, alkaloids, and flavonoids. Stem bark contains triterpenes: ÃŸ-sitosterol, stigmasterol, lupeol, epilupeol, and the aromatic compound p-methoxybenzaldehyde. Leaves have ÃŸ-sitosterol and lupeol. Phytochemical screening yielded sterols, phenolic compounds, triterpenoids, and flavonoids. The seeds yield 18 to 27.5% fatty oil. Its main use is in the tanning industry.
- **Pharmacological action**: The plant is used as a spasmogenic and anti-rheumatic, as well as for constipation, inflammations, arthritis and hemiplegia. It is hepatoprotective/cytotoxic and wound healing. It can also be used against malaria, as an antimicrobial, against staph infections, and against asthma, and is said to kill cancer cells. It acts against different cell lines (MCF-7 [breast]), carcinoma of cervix HeLa cells, carcinoma of the brain and colon and prostaglandin E2-induced enteropooling. Charcoal-induced motility tests in rats showed dose-dependent anti-diarrhoeal properties. The flowers and leaves are made into a tea given to babies before bed. It has also been used for bronchitis. It is an anti-nociceptive and cytotoxic.
  Roots, flowers and bark are used for treating parasitic infections and pulmonary problems. Leaves give relief from constipation and their juice cures fever. Flower juice cures sores and seeds help cure chest pain and breathing difficulties. Pounded roots are effective for convulsions and the bark for treating diarrhoea. A flower decoction is used for chronic catarrh and coughs. The infusion may be used as a mouthwash for gums and teeth, and provides relief from constipation and treats kidney stones. A root decoction treats cholera. A

leaf or bark infusion is used for abortions, and leaf infusions prevent malaria and promote the menstrual flow. As a gargle with tea, it treats mouth and throat sores and the flowers' liquid extract is topically used as an eyewash.

The plant is used as an antibacterial, carminative, and antipyretic. The oil possesses insecticidal and antibacterial effects and is included in soap-making, illuminating and pharmaceutical preparations. The seed is carminative, purifies and enriches the blood and is used in cases of inflammation, earache and chest complaints. It is an antioxidant, scavenges free radicals and prevents LDL cholesterol from being damaged. It behaves like an antihistamine and may help protect against heart disease and cancer. Flavonoids are anti-inflammatory, purgative for the watery evacuation of the bowels, reduce or eliminate fever and are widely used as a cure for bronchitis.

A root decoction is used for cholera, and an infusion of flowers relieves chest affections, reduces or eliminates fever, and cures bronchitis, asthma and malarial fevers.

A combination of the roots, bark, and leaves may be boiled into a medicinal tea, which is given to patients as a treatment for fever, jaundice, kidney disease, and gastrointestinal disorders. Gargling with the tea is also said to treat sores in the mouth or throat.

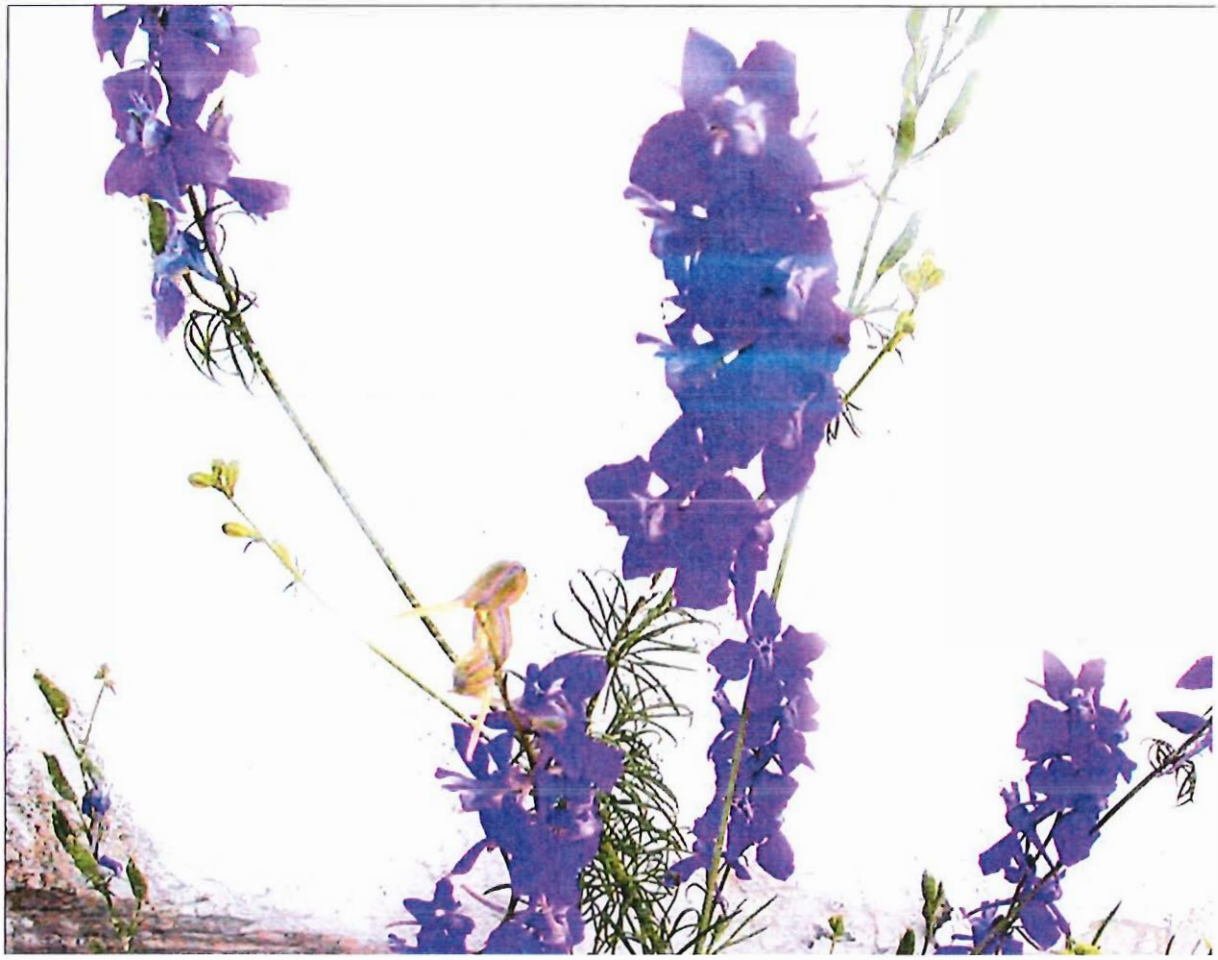
A liquid extracted from the flowers of the plant is often used topically as an eye wash or applied to the body as an insecticide. The liquid is sometimes consumed to treat a variety of other conditions. Patients with severe gastrointestinal disorders, including dysentery or severe diarrhoea, may also be given the fruit of the plant, which is said to have astringent properties. These properties help the plant to dry out the intestinal tract.

The plant is useful in the treatment of gastrointestinal disorders and internal or external wounds.

In folk medicine, the plant is used for the treatment of diabetes. It has antimicrobial, antioxidant, hepatoprotective and anti-inflammatory properties.

- **Other uses**: At maturation time, trees develop broad umbrella-shaped crowns. They are mostly planted for their shade-giving properties and as ornamental trees. The gul mohar tree grows to a height of between 30 and 40 feet. Flowers, seeds and young pods are consumed. The flower is used as an acid-base indicator and for its natural colour. Green seeds are consumed raw or cooked. The plant is a nitrogen-fixing tree and provides ample shade. Pods activate carbon or the removal of Hg from water by absorption and its extracts inhibit the corrosion of aluminium in HCl solutions. The flower is viable agricultural waste for the removal of Co, Cu and Pb ions and very effective against 3rd instar larvae of *H. puera*, indicating a potential use as a bio-pesticide. The wood is employed locally for agricultural implements, handles for carpentry tools, combs etc. The plants' principal use is as a fuel, the calorific value of wood being 4600 kcal/kg. The oil cake is a good fertiliser. The seed cake can also be used by poultry. The tree is mainly grown for its shade and ornamental value. Because of its hardy nature and aggressive root system, it is a good tree to control soil erosion in arid and semi-arid areas. It is also a host for lac insects and parasitic mistletoes.
- **Caution**: People allergic to *Delonix regia* should avoid it. It should be consumed in moderate amounts. Green pods cause agitation to the intestine in humans and animals, and cause nausea, vomiting, and diarrhoea.

  Most references have mentioned that the peacock flower is poisonous, but people in certain parts of the world do eat the seeds, presumably after boiling them in several changes of water.



- **Arabic name**: Ayiq, Lisan Al-Asfoor
- **Scientific name**: *Delphinium ajacis* L. (Syn. *Consolida ajacis* (L.) Schur)
- **Common name**: Rocket Larkspur, Wild Delphinium
- **Family name**: Ranunculaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Root, seed, and the whole plant.
- **Chemical constituents**: Polycyclic alkaloids such as delphinine, ß-sitosterol, methyllycaconitine, delavein, delphinine, ajacine, aconitine, toxic diterpene alkaloids; ajacine and ajaconine in seeds.
- **Pharmacological action**: The plant is a laxative, emetic, vermifuge, anti-scabies and anti-depressive. Sometimes delavein acts as a selective inhibitor in the re-absorption of serotonin, hence it affects its level and thus reduces depression and worry. It has anti-inflammatory, diuretic and anti-dropsy effects. Delavein pigment is used externally for urine control, and against lice and parasites. It lowers cholesterol, and delavein is a tissue remedy.
- **Other uses**: It is used as an ornamental plant.
- **Caution**: Seeds contain toxic diterpene alkaloids including ajacine and ajaconine. The plant contains polycyclic alkaloids (delphinine) that affect the nervous system and cause a general collapse; when the animal is unable to get up from the ground, distension occurs, then the animal dies.

- **Arabic name**: Qorunful
- **Scientific name**: *Dianthus caryophyllus* L.
- **Common name**: Clove Pink, Wild Carnation, Sweet William
- **Family name**: Caryophyllaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Flowers
- **Chemical constituents**: Volatile aromatic oil, kaempferide triglyceride along with C-and O-flavonoid glycosides.
- **Pharmacological action**: The plant is cardiotonic and anthelmintic. The flowers are aromatic, and the oil is an aphrodisiac, fragrant, decorative and medicinal. It possesses antifungal activity.
- **Other uses**: It is a fragrant and flavouring herb. It is a good wild flower for bees, and is a preferred plant in gardens, partly for its decorative appearance.
- **Caution**: Eating the plant may cause some minor symptoms such as allergic reactions, rashes, vomiting or diarrhoea. The ingestion of small amounts may not cause any symptoms. Exposure to the plant's juice or sap or a puncture wound from the thorns may produce a skin rash or irritation. Its oil is an irritant to sensitive skins.

- **Arabic name:** Qorunful Mnaqat, Qorunful
- **Scientific name**: *Dianthus strictus* Banks and Sol.
- **Common name**: Carnation
- **Family name**: Caryophyllaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: The whole plant, flowers, fruits, and leaves.
- **Chemical constituents**: Aromatic volatile oil.
- **Pharmacological action**: The plant is traditionally used as an external hypotensive, diuretic, tonic, antibacterial, and enhances hair growth. Fruits are used for toothache.
- **Other uses**: Leaves and flowers are pounded and prepared as a tea.
- **Caution**: No reports.

- **Arabic name**: Lesan Al-Assfoor Alkathab
- **Scientific name**: *Dictamus albus* L.
- **Common name**: Burning-Bush, False Dittany, White Dittany, Gas-Plant, Diptam Plant, Fraxinella.
- **Family name**: Rutaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: The whole flowering plant, oil, flowering stems, leaves, and root bark.
- **Chemical constituents**: Aromatic oil; the major components in leaf oil are germacrene D, and phytol. The flower's major oil components are limonene, trigonelline, □-terpinene and citronellol. Flavonoid glycoside, flavonoids, furoquinoline alkaloids, robustine, dictamine, □-fagarine, skimmianine and haplopine are present in the root bark. Alkaloids, limonoid triterpenoids, sesquiterpenoids, coumarins, and phenylpropane. Furocoumarin, xanthotoxin, benzofuran glucosides, cnidioside A, methylcnidioside A, cnidioside B, Me ester of cnidioside B and flavonol glycosides rutin, isorhamnetin-3-O-□-D-rutinoside and kaempferol-3-O-□-D-rutinoside. Furanocoumarine compounds, with imperatorin, psoralen, bergapten and isopimpinelin. Limonoids, preskimmianine and fraxinellone. Main components of oils are dictagymnin, feniculin,

methylchavicol, and trans-anethol. Higher terpenes, fatty acids, essential oils, auraptene, and inflorescence rutin are in the leaves and lactones.

- **Pharmacological action**: The plant is abortifacient, anthelmintic, antibacterial, antispasmodic, aromatic, digestive, diuretic, emmenagogue, expectorant, febrifuge, galactagogue, homeopathic, stimulant and tonic. It is also used as a sanitary material for infants to protect the skin from diaper rash in a whitening cosmetic composition, and in a skin disease composition for treating dermatophytosis. The root bark is bitter, lowers fever, controls bacterial and fungal infections, stimulates muscles of the uterus, emmenagogue and is sometimes abortive. The plant is used as an anticancer agent in folk medicine and for anti-fertility. The plant is also used in the treatment of skin diseases (especially scabies and eczema), German measles, artluritic pain and jaundice. It is recommended for nervous complaints, scrofulous and scorbutic diseases, the treatment of female complaints and constipation, and it is believed to be useful for cordial and cephalic ailments, to help resist poison and combat putrefaction, and to be useful in malignant cases and in cases of hysteria. Its volatile oil is anti-inflammatory, and an infusion of the tops is a pleasant and efficacious medicine for gravel, provoking urine and easing colicky pains. The root is a remedy for epilepsies, head diseases, opening obstructions of the womb and procuring uterus discharges.
- **Other uses**: Leaves' infusion is used as a tea substitute and is a good digestive.
- **Caution**: Plant secretions are toxic, rubefacient and cause burns and dermatitis; large doses are poisonous. Sensitive persons just standing close to the plant show toxicity symptoms.

- **Arabic name**: Sarkhas Thakar, Khinshar Katheir Al-Arjul, Shard
- **Scientific name**: *Dryopteris flix-mas* (L.) Schott.
- **Common name**: Male Fern Stakich, Male Fern
- **Family name**: Dryopteridaceae or Polypodiaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: Rhizomes, fronds bases, and roots.
- **Chemical constituents**: Phloroglucinol compound, phenolics, p-aspidin, aspidinol, and flavaspidic acid, desaspidin and trisdesaspidin. Filmaron, filicic acid, filicin, volatile oil traces, flavaspidic acid, oleo-resin, fixed oil, tannic acid, starch, sucrose, tannins, traces of aromatic oil, flavaspidic acid, alpaspidin, a fluorine compound, clotstein and bitter materials.
- **Pharmacological action**: Internally the plant is a powerful anthelmintic, especially against tapeworms. The anthelmintic activity has been claimed as being due to the flavaspidic acid, a phloroglucinol derivative, and externally it is cicatrizing. In addition, the oleo-resin paralyzes the muscles of the worm so it cannot adhere to intestinal walls. It is also used for treating other intestinal parasites.
  Some of the ichthyotoxic phloroglucinol derivatives from fragrans show *in vitro* and *in vivo* anti-tumour-promoting activity. These toxic compounds, except for the new ones, were also reported as potent antibacterial, anthelmintic and anti-tumour agents.
  In folk medicine, filicin extract is an anthelmintic used against tapeworm; roots and young leaves are also used externally as bandages for rheumatism ailments, gout, foot pain and neuralgia.
- **Other uses**: The plant is an indoor ornamental.
- **Caution**: All plant parts are poisonous. The male fern should never be collected and used for self-medication. Strong doses are highly toxic and may lead to permanent blindness. The drug is toxic and must be used with great care. Fern extract should never be used with castor bean oil since it helps the absorption of extremely poisonous filicic acid by the intestines. Filicic acid affects the central nervous system, causing headaches, dizziness, dyspnoea, deafness and paralysis, and it also reduces blood pressure. The plant is not for internal use, but medical preparations can be obtained from the plant and are used for ailments.

The plant in a nursery

- **Arabic name**: Zaizafoon, Zaitoon Rousi, Zaytonah Sori, Zaytona
- **Scientific name**: *Elaegnus angustifolia* L.
- **Common name:** Silver Berry, Oleaster, Russian Olive, Oil Tree, Wild Olive
- **Family name**: Elaeginaceae
- **Growth habit**: Shrub, Sub-tree or Tree
- **Life cycle**: Perennial
- **Part/s used**: Seed oil, fruits, flowers, buds, bark, and leaves.
- **Chemical constituents**: Volatile oil in flowers, farnesol, glucoside, mucilage, tannins, flavonoids and fatty acids. The fruit is a very rich source of vitamins and minerals, especially A, C and E, flavonoids and other bioactive compounds. It is also a fairly good source of essential fatty acids and contains sugars, tannins, protein, and organic acids.
- **Pharmacological action**: The plant is antispasmodic, expectorant, emollient, a stomach tonic, anti-inflammatory, anti-rheumatic, sedative, spasmolytic, diaphoretic, diuretic, a mild astringent, febrifuge, arteriosclerotic, hypertensive, pectoral and feverish. It cures migraines and hysteria, and is also used for respiratory system disorders, colds, cancer, headache, and anaemia. Fruits are anti-dysenteric, anti-diarrhoeal, cure skin sores, clean teeth and act as a deodorant. It is used as an infusion or decoction for colds, grippe,

cough, and flu. It is a diuretic, and useful for urinary tract, intestinal and kidney disorders. It is externally used in the bath as a body stimulant. The plant is an insect repellent.

The oil is used with syrup in the treatment of catarrh and bronchial affections, and the flower's juice is used to treat malignant fevers. The fruit is being investigated as a food capable of reducing the incidence of cancer and as a means of halting or reversing cancer growth.

In folk medicine, the flower's oil is a general sedative. It is useful in tonsil inflammations and in the inflammation of vocal cords, coughs, thoracic allergies, all tussive cases and thorax diseases.

❖ **Other uses**: Ripe fruits, either raw or cooked, are used as a seasoning in soups. They have a dry, sweet and mealy taste. The fruit can also be made into jellies, and when mature is quite astringent. The seeds, either raw or cooked, can be eaten with the fruit, though the seed case is rather fibrous. Leaves and the cortex are used in leather tanning, and the aromatic oil is used in perfumes. The plant is an ornamental on streets and in public gardens.

Caution: Exposure to juice or sap from the plants or a puncture wound may produce a skin rash or irritation. Skin wounds from some of these plants can be extremely painful, causing large blisters and skin burning.

The whole plant

- **Arabic name**: Ekidenia, Bashmalah, Eskedenia
- **Scientific name**: *Eriobotrya japonica* (Thunb.) Lindl
- **Common name:** Japanese Loquat
- **Family name**: Rosaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Fruits
- **Chemical constituents**: Nitrogenous materials, fats, sugar, vitamins B and C, organic acids (maleic, citric, potassium and tartaric), and gum from galls.
- **Pharmacological action**: The plant is used against dysentery, diarrhoea, and enteritis. It is a tonic, astringent and diuretic, and regulates intestinal functions.
- **Other uses**: It is a fruit tree, the fruits of which are eaten fresh or in jam.
- **Caution**: No reports.

The whole plant in the field

- **Arabic name**: Keena, Kayna
- **Scientific name**: *Eucalyptus camaldulensis* Deh.
- **Common name**: Eucalyptus, The River Red Gum
- **Family name**: Myrtaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: The whole plant, leaves, essential oil and oleo-resin.
- **Chemical constituents:** Leaves contain 0.1–0.4% essential oil, which consists of eucalyptol kenone and cineol (77%). There is some cuminal, phellandrene, aromadendren (or aromadendral), some valeraldehyde, geraniol, cymene, and phellandral. Leaves contain 5–11% tannin, 45% kinotannic acid as well as kino red, a glucoside, catechol, and pyrocatechol. Leaves and fruits contain flavonoids and sterols. The bark contains 2.5–16% tannin, the wood 2–14%, and the kino 46.2–76.7% and essential fatty acids.
- **Pharmacological action**: The plant is aromatic, astringent and tonic. It is externally used on cuts and skin infections, inhaled for treating colds or used as a gargle for sore throats. The resin, which contains tannin, is used as an anti-diarrhoeal and for cystitis. It is used for female disorders such as cramps, hot flashes and heavy bleeding. The plant is effective against atopic diseases such as eczema and hyperactivity. The extracted oil from dried leaves is used for nose and throat disorders, as an expectorant, an antibiotic, a cure from malaria and other fevers and also for bronchitis. It is used for chronic digestive system diseases such as dysentery, open respiratory tracts, and when mixed with olive oil at 1:1 v/v is used to cure rheumatism ailments and as a burn ointment.
  In folk medicine, the plant is a sedative, antiseptic and anaesthetic, and is used for colon colic, coughing, haemorrhages, laryngalgia, laryngitis, pharyngitis, spasms, trachealgia, dysentery, convulsions and wounds.
  Leaves are a traditional aboriginal herbal remedy. The essential oil is a powerful antiseptic, relieving coughs and colds. It is used for the urinary system and other infections. A decoction of leaves and bark is used as an inhalation, or feet can be left in it to relieve pains.

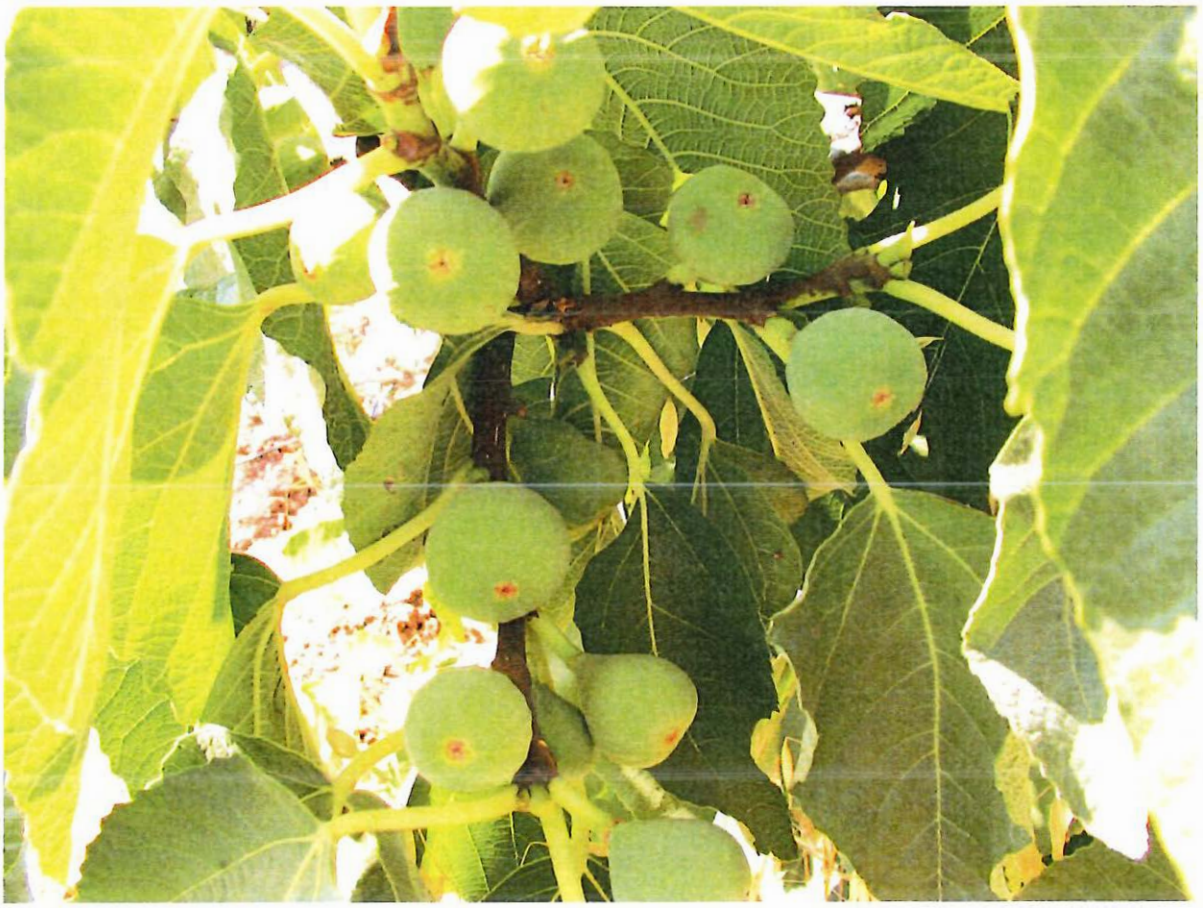
- **Other uses**: It is a forest tree, which attracts honey bees. Eucalyptus oil is used in the production of high-quality soap. The tree is grown close to ponds and along running waste water for mosquito control.
- **Caution**: The essential oil (eucalyptol) is poisonous. Some caution is advised, however, like all other essential oils, it has a harmful effect on the body in large doses. It acts as an insecticide. Toxicity symptoms include intestinal inflammations, nausea, emeting and diarrhoea, oxygen deficiency, dyspnoea, paralysis and death. The plant is a source of allelochemicals.

The plant naturally growing in waterways

Fruiting plants

The whole tree

- **Arabic name**: Teen Bengali
- **Scientific name**: *Ficus benghalensis* L.
- **Common name**: Bergapten
- **Family name**: Moraceae
- Growth habit: Tree
- **Life cycle**: Perennial
- **Part/s used**: Leaves, fruits, bark, latex, and aerial roots
- **Chemical constituents**: The fruits contain bergapten, latex, vicosin and bergapten, which gives alpha amyrin and imperatorin.
- **Pharmacological action**: The leaves are astringent, and the bark is anti-diarrhoeal, anti-dysentery, and anti-bleeding. Latex is used on haemorrhoids, warts and painful joints. The fruit is a laxative, the roots are chewed to protect gums, and the bark is anti-diabetic and diuretic. A leaves decoction mixed with oil is applied to ulcers.
- **Other uses**: It is an ornamental tree on streets and in large public gardens.
- **Caution**: Latex causes skin rash or irritation, which may be very serious and painful. It may spread internally into the mouth, stomach and intestine, and as it is toxic it cannot be internally taken. It can also cause other minor symptoms, such as vomiting or diarrhoea, and allergies, and is otherwise toxic to humans.



- **Arabic name**: Teen
- **Scientific name**: *Ficus carica* Forssk.
- **Common name**: Fig
- **Family name**: Moraceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Wood, latex, flower, leaves, seeds and fresh or dried fruit.
- **Chemical constituents**: Dried fruits contain 70% sugars (mainly glucose and fructose), organic acids (maleic, citric and others), cellulose (5%), vitamins A, B_1, B_2, C, micronutrients and salts of calcium, phosphorus and iron and latex. Latex contains furanocoumarins, namely psoralen and bergapten.
- **Pharmacological action**: A drink made of fig fruits is a mild laxative; its infusion cures inflammation of the respiratory system and reduces acute coughs and pharyngitis. It is a liver tonic. Fruits are used in folk medicine after being dipped in honey at a rate of 1-2 fruits in the morning before any food is taken internally to treat haemorrhoids. Figs are easily absorbed, energetic and are useful for chronic constipation, especially in elderly persons. Fig drink is a galactagogue and cures gout since it helps with the metabolism of uric acid and salt disposal from the body. Figs contain one of the materials involved in blood coagulation and thus it stops bleeding. Fresh or dried figs are useful in curing and uplifting haemorrhoids since figs possess astringent properties of blood vessels. It is useful for furuncles. Figs are a tonic for gymnastic persons, pregnant women, dieting people, and youngsters and teenagers. It cures mouldy wounds and sores, whooping cough, blisters, bruised fingers and toes, coughs, depression, freckles, kidney stones, leprosy, nervous tension, and removes stomach pains. It is emetic, demulcent, antiseptic, diuretic, laxative and nervine.
  Fruits are used against constipation and flatulence. The plant is used as a fuel and fodder. Fruit juice and latex are effective against warts, piles and chronic ulcers. Latex soothes bee stings by simply being rubbed on the skin. It removes warts and is used for teeth abscesses. Fresh leaves are crushed and paste is applied topically for boils.
- **Other uses**: The unripe fruit and young growths are cooked and eaten as a vegetable. Latex in small amounts can coagulate milk and transform it into yoghurt and cheese; it is also used for warts, drunk as a laxative, and used to repel worms from the stomach. The plant is a fruit tree; its fruits can be made into jam and juice and a certain wine is prepared from the fruits.

❖ **Caution**: Latex causes skin, eye and lips inflammation. Fruits are not allowed for diabetics or people who suffer from obesity and indigestion. The plant cell sap contains a fucusin compound that causes skin irritation and eye inflammation, especially when exposed to sunlight.

Ficus sycomorus L.

- **Arabic name**: Shoomar, Shummar, Shumrah, Razyang, Shorum, Busbas
- **Scientific name**: *Foeniculum vulgare* Mill
- **Common name**: Fennel
- **Family name**: Umbelliferae / Apiaceae
- **Growth habit**: Herb
- **Life cycle**: Biennial or Perennial
- **Part/s used**: Young root, and seeds.
- **Chemical constituents**: Volatile oil consists of 60% terpenoid anethole, 16% ketone, fenchone, pinene, apiin, fatty acids, vitamins and minerals. The herb's essential oil contains estragole (2.3-4.9%), and seeds' essential oil also contains estragole (56.1%).
- **Pharmacological action**: The plant is an aromatic, condiment, carminative, galactagogue, spasmolytic, tonic, diuretic, choleretic, antipyretic, and anti-microbial. It is used for coughs, gut and digestion ailments, kidney pains, stones and fever. Anethole and other terpenoids may have mild oestrogen-like activity and inhibit spasms in smooth muscles; it is an antiseptic, analgesic, anti-inflammatory, emmenagogue, expectorant, hallucinogenic, laxative, stomachic and stimulant of circulatory and respiratory systems. It is antispasmodic, moisturizing, hormonal, and a nerve tonic and detoxifies systems.
  Seeds are used in diets for weight loss, gastric troubles and gout cramps. A seed fusion is used for wind in babies and urinary disorders. Seeds are combined with a urinary disinfectant and make an effective treatment for cystitis. It can be used for sore throats, sore eyes and conjunctivitis. The decoction is a sedative, stomach demulcent, aromatic, spice, tonic, diuretic, anti-convulsion, anti-fever and anti-microbial. It is an emollient and nerve tonic. The essential oil has anti-bactericidal activity, is useful for asthma, is hypotensive and used for colon and intestinal colic.
  Fennel loosens lung mucus and helps clear the chest, and it is beneficial for asthma and lowers blood pressure. It helps regulate energy to the spleen and liver and is used topically for arthralgia. It is a galactagogue, emmenagogue, an aphrodisiac, increases libido, and a cure for nephritis and abdominal colic.
  The herb perfume is pleasant for skin care products, used for massages where there is cellulite, for breast firming massages, and has an energizing and toning aroma. Fennel reduces water retention and urinary tract problems. It slightly stimulates the adrenal glands and is used for bruises, dull skin, oily mature complexions, wrinkles and dry skin.

In folk medicine, fennel oil is a tranquillizer for children to treat gastric pain and period pain. It is a diuretic lactific, used for nurse menses and lax obesity and helps people to lose weight. It is useful in the treatment of prostate cancer diseases. It is also a tranquillizer for colon colic, and prevents spasmodic coughs, joint and dental inflammations and eye ailments. It is useful for dry skin and for preserving food, is recommended for colds and congestion, and is a remedy for digestive complaints such as flatulence, constipation, colic, nausea, vomiting, anorexia, dyspepsia, and hiccups. It has a cleansing and tonic effect on the skin, helps with bruises, sorts out overly oily skin and fights wrinkles in more mature complexions (possibly due to the estrogenic properties of the oil that has aperients properties). It is mildly laxative and effective in removing intestinal worms.

- **Other uses**: Raw fresh shoots and leaves are used for seasoning. The entire plant is edible; leaves are used with fish, vegetables, cheese spreads, and soups, as a garnish on raw or cooked dishes, and make a very pleasant addition to salads.
  Seeds are used in sausages and baked goods, and as a flavouring in cakes, bread, stuffings and food. They improve digestion and can be added to salads. The roots are cooked, and the leaves or seeds can be used to make a pleasant-tasting herbal tea. The essential oil is used as a food flavouring, and is also used in toothpaste, soaps, perfumery and air fresheners. Its flavour depends upon fenchone and anethole. The dried plant is used as a herbal tea, and also in the food industry, pharmaceutics and veterinary practices. It is an insect repellent.
- **Caution**: Fennel is a uterine stimulant and therefore should be avoided during pregnancy. It must not be used by children under 6 years old (it contains melanthin which is toxic for small children), children who have not reached puberty, epileptics, during pregnancy or by those with high oestrogen levels. Food containing fennel fruit must have a warning for children under the age of 12 not to ingest quantities of estragole > 0.05 mg/kg bw/day. Skin contact with the sap or essential oil causes photosensitivity and/or dermatitis in some people. The oil can cause vomiting, seizures and pulmonary oedema. Excess use of the oil can overexcite the nervous system. In rare cases, it can cause allergic reactions of the respiratory tract. It is narcotic in large doses.

A single plant

- **Arabic name**: Kumaquat
- **Scientific name**: *Fortunella margarita* (Lour.) Swingle
- **Common name**: Kumquat, Gold Tangerine, Sweet Tangerine
- **Family name**: Rutaceae
- **Growth habit**: A shrub
- **Life cycle**: Perennial
- **Part/s used**: Flowers, fruits, and dry fruit peel.
- **Chemical constituents**: Carbohydrates, vitamin C, aromatic oil, glucoside, protein, mineral elements including potassium, phosphorus, magnesium and sodium, and the vitamins thiamin, riboflavin and niacin. The peel is rich in phenols, flavones, flavon glycosides and pectin. Pyranocoumarines (soberosin) and the rare kaurene diterpenes are found in the roots.
- **Pharmacological action**: A cure for respiratory system inflammations, the fruit repels phlegm, coughing, regulates energy transfer and is also useful for the spleen. It is a digestive, cures stomach pain and swelling, whooping cough in children, scrofula, throat ulcers and sputum, anorexia due to cold, and eczema. The peel is an antioxidant, leaves cure hiccups and scrofula, while roots cure stomach ailments, hernia and a prolapsed uterus.
- **Other uses**: It is a fruit tree; the fruit and fruit peel are eaten raw or cooked. Fruits may be used in jams or as a flavouring agent. The plant is regarded as an ornamental in private gardens.
- **Caution**: No reports.

Small newly planted fruiting plant

The plant with mature fruits

- **Arabic name**: Farawleh, Toot Al-Ard
- **Scientific name**: *Fragaria vesca* L.
- **Common name**: Strawberry
- **Family name**: Rosaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: Fruits, leaves, roots, and rhizomes.
- **Chemical constituents**: Fruits contain vitamin C, carotenes, traces of vitamin B, and a volatile oil rich in aldehydes, ketones and esters. Fruit also contains pectines, organic acids (maleic, stearic, silicic), sugars, amino acids, fragarin glucoside, anthionin derivatives, volatile sulfur compounds and mineral elements, especially iron. Leaves contain vitamin C, tannins, flavones, volatile oil and a few alkaloids. Roots contain 13% tannins, and triterpene compounds. The strawberry is rich in salts of calcium, iron, potassium and sugars; in addition, it contains vitamins E and K.
- **Pharmacological action**: Leaves are diuretic and astringent; their infusion alleviates liver and gall stone ailments. Leaves' pigment and decoction are sedatives, hypotensive and pulses tonic. Fruits are used for anaemia, and a dried fruits decoction is a febrifuge. The plant is diuretic, and cleans gall and kidney gravel. It is used for gout, scurvy, tuberculosis, and liver debilities, and is useful for diabetics because of its natural sugar contents. Its fruit juice is alkaline and a diuretic, stomach stimulant, digestive, laxative, nutritive and tonic. It helps to build tissues, cleans the blood, is a detoxicant, regulates gallbladder secretions, is anti-bleeding, and removes teeth yellowing and sediments. A leaves infusion is used for diarrhoea, women bleeding and haemorrhoids. The tincture and leaf decoction are sedative, hypertensive and a uterine tonic. Leaves and roots are used in cases of bile secretion deficiencies, liver, bladder and kidney diseases, face epidermis care as skin stimulants, and in the removal of wrinkles.
  The rhizome decoction is used in folk medicine as an astringent and an anti-diarrhoeal, and rhizomes and roots are used in blood bleeding, women's medication, as an anti-diarrhoeal, and for sores and purulences. The rhizome acts on digestion and mesenteric glands, prevents the formation of calculi, removes tartar from teeth and prevents gout. The fruit has refrigerant properties, is used in homeopathic remedies, and is thought to be effective against bladder gravel, kidney difficulties and intestinal worms. Strawberry leaves clean the stomach and are very useful as an anti-diarrhoeal.

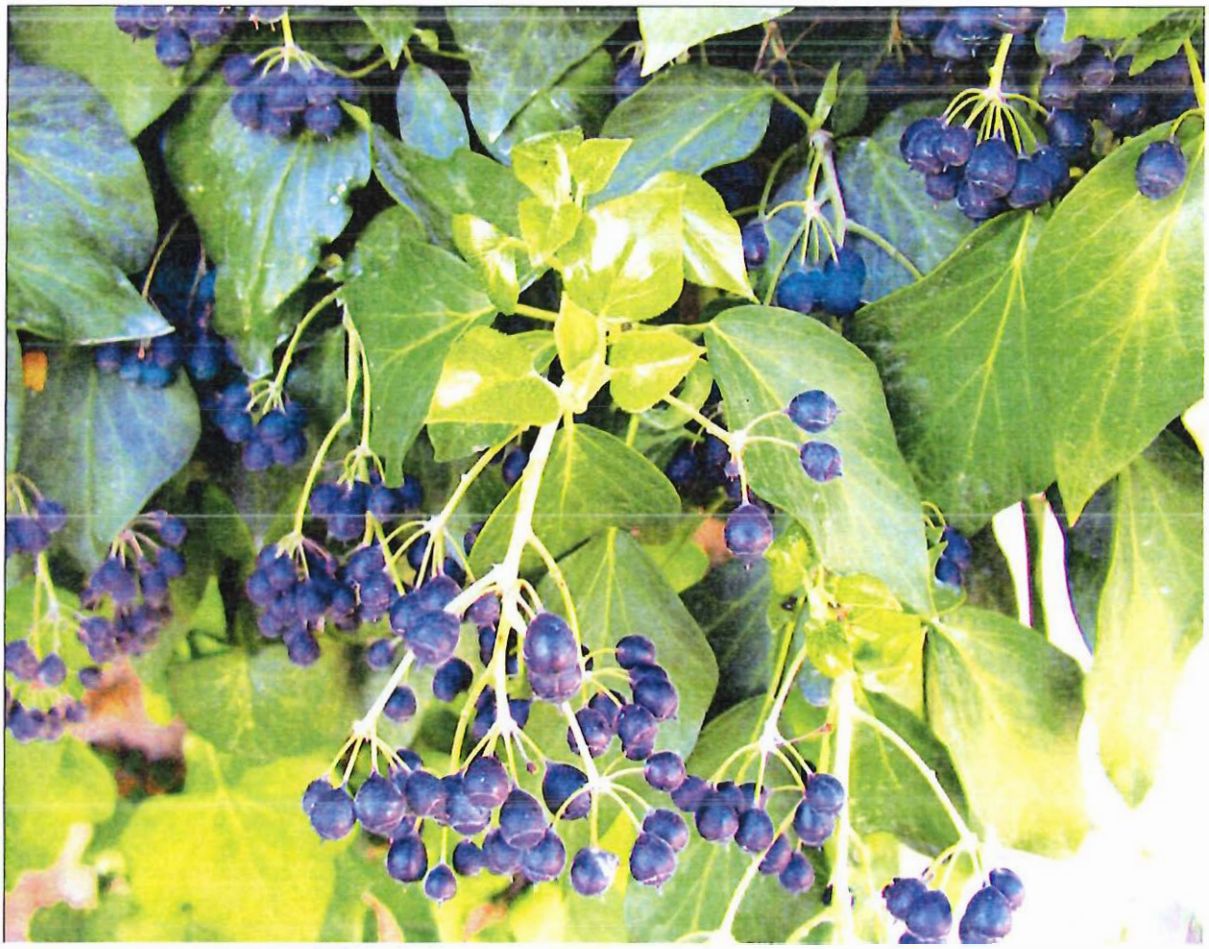
- **Other uses**: Fruits are edible fresh and their juice is consumed as a drink, and they are also used in jam, drinks, cakes, sweets and pastry. The plant is a good hedge in home gardens. Fruits are used in desserts as a garnish, as well as in jam and punch. Leaves are used for tea. The plant is visited by honey bees.
- **Caution**: It is advised not to be taken by persons with high allergies. Strawberries produce symptoms of poisoning in certain susceptible individuals, such as urticarial rashes (strawberry anaphylaxis), itching and sudden diarrhoea. It should be avoided in cases of indigestion, possible eczema infection, chilblains, which are worse during hot weather, and lack of mammary secretion.

Strawberry fruits

The flowering plant

- **Arabic name**: Durdar Sori, Marran
- **Scientific name**: *Fraxinus syriaca* Boiss
- **Common name**: Syrian Ash
- **Family name**: Oleaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Bark, young branches, and leaves.
- **Chemical constituents**: Tannins, mucilage, and bitter compounds.
- **Pharmacological action**: The bark is astringent, anti-diarrhoeal, used externally for sores and wounds, and is also an indigestive. The plant is a tonic, stimulant, emetic and emollient for inflamed tissues.
- **Other uses**: It is an ornamental and forestry species.
- **Caution**: No reports.

- **Arabic name**: Liblab Muzarkash
- **Scientific name**: *Hedera canariensis* Willd
- **Common name**: Canary Ivy, Madeira Ivy, Algerian Ivy
- **Family name**: Araliaceae
- **Growth habit**: Woody climber
- **Life cycle**: Perennial
- **Part/s used**: Young leaves.
- **Chemical constituents**: Hydrin and flavone glycosides (rutin, quercetin).
- **Pharmacological action**: The plant is astringent, expectorant, rubefacient (mucus membranes), antispasmodic, emmenagogue, liquefactor of blood and exerts a cardiac action. It is used for bronchitis, it is anti-rheumatic, anti-asthmatic and anti-coughing, and is also a repellent of external parasites. Small doses cause the dilatation of blood vessels, but large doses cause a constriction of the vessels and slow the heartbeat. Small doses are a vasodilator, but the opposite effect is obtained at high doses with lower cardiac pulses. Externally, it heals wounds. Berries are purgative and are used for respiratory system diseases and rheumatic pains. The plant heals external wounds and its fruits are emetic.
- **Other uses**: It is an ornamental climber plant.
- **Caution**: All parts of the plant are poisonous; it should never be collected and administered for self-medication. Berries and leaves cause severe irritation and allergics contract dermatitis after a delay following contact with the cell sap. The ingestion of a small amount may cause symptoms such as rashes, vomiting or diarrhoea.



- **Arabic name**: Liblab Sam, Habl Al-Masakeen, Hedra, Liblab Mutasaliq, Al-Eshqa
- **Scientific name**: *Hedera helix* L.
- **Common name**: English Ivy, Winter-Grunt, Winter-Green, Kissos, True Ivy, Common Ivy
- **Family name**: Araliaceae
- **Growth habit**: Woody climber
- **Life cycle**: Perennial
- **Part/s used**: The young leaves and berries.
- **Chemical constituents**: Saponins hederacoside C and □-hederin, hedera saponins A and B and triterpene glycosides. Triterpene saponins from the fruits. Contains balsamic resin and aromatic gum. Flavon glycosides: rutin and quercetin. Tannins, organic acids, carotenoids, antibiotic materials, pectin and glaucin alkaloid.
- **Pharmacological action**: The plant is analgesic, astringent, emmenagogue, anti-tussive, abortifacient, and anti-inflammatory. It is used for asthma, bronchitis, coughs, diabetes, diarrhoea, dysmenorrhoea, rheumatism and wounds. It is an expectorant, anthelmintic, antispasmodic and cardiac. Hederin is a haemolytic. Saponins have antioxidant activity, and are employed for corns, plagues, spasms, lice and vermin, spleen disorders, whooping cough, neuralgic toothache, sore and painful eyes, severe headaches and hangovers. The resin is a mild aperient. It is considered to cause the excitation of mucus membranes in the mouth, stomach and intestine. Small doses cause the dilatation of blood vessels, but large doses they are constrictive and slow the heartbeat. It was used to treat respiratory diseases. Berries are purgative if taken internally. Leaves decoction is used for gout, chronic coughs and, externally, the plant is a skin excitant, its leaves decoction is used in poultices for rheumatism and for the inflammation of cellular tissues. Its extract is a parasite repellent, and a leaf tincture poultice is used for burns, wounds, corns and warts. The plant is used in cosmetics and in shampoo compositions containing surfactants, and the plant extracts are used for hair straightening. Water infused with ivy leaves is a wash for sore or watering eyes.
- **Other uses**: The gum is used in teeth fillings. The plant is common in public gardens, home entrances and as an ornamental boundary plant with beautiful leaves.
- **Caution**: All parts of the plant are poisonous; they should never be collected and used for self-medication because of the toxins in the plant. It should only be used under the strict supervision of a qualified

practitioner. The plant is regarded as poisonous to man and animals, and its fruits cause local and neural irritability, dyspnoea, increase salivation, vomiting, and severe intestinal pains associated with severe dysentery. Seeds and leaves cause death to birds and cows after being fed to these animals because of the saponin triterpenoid (hederagenin).

Dogs may chew on stems that often lie low to the ground. Symptoms of poisoning include stomach irritation, breathing difficulties, eventual coma and death. The leaves can cause severe contact dermatitis in some people who have certain hypersensitivity allergies due to the presence of falcarinol, which is also found in other members of the Apiaceae. Leaves contain saponins (2.5%-5.7%) and alpha-hederin. It has a hederine hemolytic index score of 150000. Intoxication from berries has been reported.

- **Arabic name**: Abbad Al-Shams, Dawar Al-Shams, Ein-Al-Shams
- **Scientific name**: *Helianthus annuus* L.
- **Common name**: Sunflower
- **Family name**: Compositae / Asteraceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Seeds, leaves, flowering heads, and flowers.
- **Chemical constituents**: Seeds contain oil (29-59%) made from glycerides of different acids. Glycosides, fluorine, potassium, calcium, iron, phosphorus, copper, and magnesium, fibres, amino acid, vitamins A, B and, E, carbohydrates, proteins, phytate, tannins, citric acid and tartaric acid. In the flowers and leaves are betain, koline and nitrogen bases. It also includes arnidol, pharadiol, glycoside cyanidin and carotenoids. Leaves contain carotenes and resin materials. 1, 8-cineole, alpha-amyrin, alpha-pinene, alpha-terpinene, alpha-terpineol, alpha-tocopherol, arginine, beta-carotene, beta-sitosterol, chlorogenic acid, choline, cinnamic acid and citric acid. The root contains phenols, flavonoids, terpenoids, lacton, anthraquinones, and organic acids. The heads also contain pectin.
- **Pharmacological action**: The oil is an antioxidant food, reduces blood sugar levels, and is used for rheumatic pain, colds, cardiac diseases, and respiratory tract infections and swelling. It is also used in soap and as a lubricant. In addition, it reduces cholesterol levels, blood pressure, fluid retention and lung inflammation. It is a cardiac tonic and relieves chest ailments, and is anthelmintic, improves sight and is a sedative for the digestive system. Seeds contain fluorine, which prevents tooth decay and contains vitamin A, which is useful for nyctalopia. Leaves and flowers were formerly used to treat malaria. A seed tincture is used internally to relieve constipation and externally on cuts and bruises. The dried flower heads are diuretic, carminative, anti-inflammatory and anti-diarrhoeal.
  A tea made from the leaves is astringent, diuretic and expectorant; it is used in the treatment of malaria, fever and lung ailments. The pounded leaves are used as a poultice on sores, swellings, and snake and spider bites. The flowering head and seeds are febrifuge, nutritive and stomachic. Seeds are also considered diuretic and expectorant. The plant has been used with success in the treatment of many pulmonary complaints. A root decoction has been used as a warm wash on rheumatic pains.
- **Other uses**: Seeds are a good food source. The plant possesses inhibitory effects against plant pathogenic fungi. The oil is widely used in food, margarine, soap and other products such as ointments. It is also

included in the insecticide industry, and in paints and varnish. Seed by-products after oil extraction are used as an animal feed that enhances milk production.

❖ **Caution**: No reports.

As an ornamental plant

- **Arabic name**: Ain Albasha, Wardit Al-Gemal
- **Scientific name**: *Hibiscus rosa-sinensis* L.
- **Common name**: Red Mallow, Chinese Hibiscus
- **Family name**: Malvaceae
- **Growth habit**: Shrub, sub-tree
- **Life cycle**: Perennial
- **Part/s used**: All parts of the plant from seeds to roots, flowers and flower sepals.
- **Chemical constituents**: The plant contains glycolic acid, citric (lemon) acid, cyanidin, quercetin, hentriacontane, calcium oxalate, thiamine, riboflavin, niacin and ascorbic acid and flavonoids. Flowers contain cyanidin diglycoside, protein, fat, fibre, calcium, phosphorus, iron, vitamins B_1, B_2, niacin, and C. Taraxeryl acetate and 8-sitosterol from the leafy stems. Leaves contain protein, fat, carbohydrates, fibre, ash, calcium, and phosphorus, and fruits consist of protein, fat, carbohydrate, fibre, ash, calcium, phosphorus, iron, thiamine, riboflavin, niacin and vitamin C.
- **Pharmacological action**: The plant is anodyne, antispasmodic, laxative, aperients, aphrodisiac, astringent, demulcent, emmenagogue, emollient, acts as a refrigerant poultice, checks bleeding, soothes irritated tissues, and relaxes spasms. It exhibits anti-fertility activity that inhibits the pituitary gonadotrophic function. The flower petals are the main cause of the anti-fertility effect. The plant has an anti-estrogenic activity, and is effective in suppressing estrone-induced uterine growth. Flowers are used for controlling dysfunctional uterine bleeding, and are used as oral contraceptives.
  The flowers are used internally in the treatment of excessive and painful menstruation, cystitis, venereal diseases, feverish illnesses, bronchial catarrh, coughs, carbuncles, mumps, and sores and to promote hair growth. The leaves are laxative. The leaves and flowers are beaten into a paste and used as a poultice on cancerous swellings and mumps. The root mucilage is used for coughs.
  Roselle lowers high blood pressure, increases urination, relieves coughs, and is of antibacterial properties. Common hibiscus is used mainly for respiratory problems, but is also widely used for skin disorders or to treat fevers. Externally, it is used as an emollient, but is taken internally for gastrointestinal disorders, and as a diuretic and laxative. The leaves are heated, can be placed on cracked feet or on boils and ulcers to promote

healing. A lotion made from a decoction of leaves can be used to soothe haemorrhoids, sunburn, open sores, and wounds.

- **Other uses**: The plant is used as a hedge and screen around gardens, houses and buildings in frost-free areas. It is a nice ornamental plant that can be used as an annual or containerized plant and placed in the greenhouse in winter time, giving beautiful red flowers.
  Flowers are used in the famed hibiscus tea, raw or cooked, and can also be made into a kind of pickle or as a purple dye for colouring food such as preserved fruits and cooked vegetables. Young leaves are sometimes used as a spinach substitute. The root is also edible but is very fibrous, mucilaginous, and without very much flavour. The bloom is the part most commonly used for food; the foliage is also very nutritious and is often readily eaten. The juice from the petals is used in shoe polish and mascara. The fibre obtained from the stems is used for coarse fabrics, nets and paper.
- **Caution**: No reports.

- **Arabic name**: Karkadeih, Hammad Ahmar, Shayi Al-Kahha
- **Scientific name**: *Hibiscus sabdariffa* L.
- **Common name**: Jamaican Tea, The Roselle
- **Family name**: Malvaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: The dried calyces, dried flower sepals and seeds
- **Chemical constituents**: Sepals contain a high percentage of organic acids including citric acid, maleic acid (13%), ascorbic acid (45 mg/100g) and hibiscus acid (23%), flavone glycosides, colouring materials of an anthocyanin nature, salts of calcium oxalate, glycosides, polysaccharides, anthocyanins and protocatechuic acid. The dried calyces contain the flavonoids gossypetin, hibiscetine and sabdaretine. The major pigment is dapluniphylline. Small amounts of myrtillin (delphinidin 3-monoglucoside), chrysanthenin (cyanidin 3-monoglucoside), and delphinidin. Seeds are a good source of lipid-soluble antioxidants, particularly gamma-tocopherol, and also contain saponin.
  Leaves contain kaempferol 3-O-rutinoside, kaempferol 3-O-glucopyranoside, quercetin 3-O-rutinoside, citrusin C, and corchoionoside C.
- **Pharmacological action**: It is antioxidant, diuretic, choleretic, febrifugal and hypotensive. Glycosidase-inhibiting hibiscus acid derivatives and extracts are used for diabetes, are hepatoprotective, and act against azathioprine-induced acute liver damage.
  Hibiscus tea is useful as a stimulant for the intestines and kidneys and reportedly for urinary tract infections. The infusion has positive effects on type II diabetes, and antimicrobial activity against *E. coli*. It inhibits blood serum lipids and has anti-atherosclerotic activity.
  Hibiscus protocatechuic acid from dried flowers is an antioxidant, anti-tumour, and reduces the incidence of liver lesions induced by LPS, including neutrophil infiltration, congestion, and liver cell swelling induced by LPS in rats. Flavonoids are used as an anticancer therapy, chiefly for the pre-cancer period. Anthocyanin is the major source of antioxidants. Hibiscus is an appetite apodictic, cures colds, stomach disorders and

respiratory system problems. It is a colouring agent and expectorant. It contains organic acids useful for digestion and in overcoming stomach acidity. Hibiscus is an abstergent and laxative, and is useful for chest problems and stomach debilities. Its drink is an anti-convulsive, reduces thirst because of the analeptic hibiscus acid, hypotensive and regulates blood cholesterol levels. It is believed that it strengthens cardiac pulses and overcomes fever.

- **Other uses**: *Hibiscus* is a fresh red tea drink, and is used in salad, jam and pie syrups. It is a colouring agent in food (sweets and jelly) and in cosmetics, and the anthocyanin is used for food colouring. Kaempferol and citrusin C have been shown to be good for skin depigmentation. Hibiscus can be drunk hot as tea or cold, and can be sweetened with sugar or honey as an analeptic summer drink. It can also be added to other drinks to improve their colour and taste. The seeds' oil is used in food.
  Caution: *Hibiscus* is not a suitable drink for those suffering from kidney disorders because of its calcium oxalite contents that form kidney stones. The mechanism through which *Hibiscus* reduces blood pressure is not well understood and may result from the breakdown of blood red cells, therefore high quantities may cause anaemia.

Flowering stage

Wild barley

Spikes of different grain rows

- **Arabic name**: Sha'ir
- **Scientific name**: *Hordeum vulgare* L.
- **Common name**: Barley
- **Family name**: Gramineae / Poaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Grain and shoots.
- **Chemical constituents**: Dietary fibre, mainly ß-glucan, starch, low saturated, polyunsaturated and monounsaturated fats, unsaturated fatty acids, protein and amino acid, minerals, vitamins (especially vitamin E), small amounts of vitamins B and B_6, vitamin C, polyphenols and rich in phosphorous and potassium. Grains contain moderate amounts of sodium, iron, calcium and magnesium. Barley is rich in carbohydrates, and also contains sugar, protein and a little gluten.
- **Pharmacological action**: It is an antioxidant, vasopressin, diuretic and used for renal calculi. The seeds are digestive, emollient, nutritive, febrifuge, stomachic, reduce excessive lactation and their sprouts are demulcent, expectorant, galactofuge, lenitive, and sometimes abortifacient. They are used for dyspepsia and infantile lacto-dyspepsia, the regurgitation of milk and breast distension. Barley is also used as a poultice for burns and wounds.

  In folk medicine, the plant has anti-tumour activity, and the germinating seed has a hypoglycaemic effect. Barley may help hepatitis and the control of diabetes. Barley bran may lower blood cholesterol levels and prevent bowel cancer. Low doses lower hyperlipidemia induced by cholesterol-fed male rats by lowering TC, TG, LDLc, VLDLC and increasing HDLc levels in the treated groups. Its supplementation has also improved liver and heart enzymes and almost restored tissues of the kidney and liver to their normal structure.

  Barley is used in the prevention of colon cancer and cardiovascular disease by drastically reducing total cholesterol and low density lipoprotein (LDL) levels and increasing high density lipoprotein (HDL). Bur barley could protect lipid metabolism and the liver and lung organs against the effect of azoxymethane as the colon-specific carcinogen substance that alters their function and architecture. In addition, it reduces the number of the incidence of aberrant crypt foci (precancerous stage) in azoxymethane-treated rats and reduces colon cancer risk. Barley can have long-term beneficial effects on the composition of colonic microbiota. A barley diet increases the biodiversity and number of total bacteria, the biodiversity of bifidobacteria and inhibits the growth of *E. coli*.

Barley has a high level of anti-proliferative activity and inhibits Caco-2 human colorectal adenocarcinoma cells. Its seeds' ethanolic extract is an antiurolithiatic agent. Seeds and their extract reduce and prevent the growth of urinary stones, and lower blood pressure and cholesterol.

The regular consumption of barley helps stabilize blood pressure and decreases any pain related to the swelling and inflammation of the joints or arthritis. Barley prevents gallstone formation in women, and reduces the secretion of bile acids, thus increasing insulin sensitivity and reducing the level of triglycerides in the body. It prevents kidney stones and supports kidney health. It promotes cardiovascular health and is healthy food for the heart, reduces child asthma and boosts the immune system. The plant helps speed up wound healing and the body's resistance to cold and flu, and therefore it helps promote the function and effectiveness of medication when taken along with antibiotics.

Barley improves digestion and relieves constipation because it is rich in fibres which work as a probiotic to benefit useful bacteria in the intestine, and the roughage aids bowel movement and digestion and prevents constipation.

Adding barley to diets in the form of soups or side meals or sipping barley water throughout the day improves digestion. The fibre facilitates the movement of food through the intestines and outside the body, thereby preventing constipation. Barley is beneficial to pregnant women.

In folk medicine, barley water enhances digestion, eases morning sickness, and helps regulate blood sugar levels. It helps cure anaemia. Barley is an excellent source of iron and vitamin B_{12}, thus enhances red blood cells and prevents fatigue.

Grass juice in the morning before food is anti-atherosclerotic. The antioxidant and hypolipidemic properties of barley leaf extract are very beneficial in the prevention and treatment of cardiovascular diseases, including atherosclerosis. Barley also cures impotence.

Since it contains arginine and nitric oxide, responsible for penile erections, it can treat penile dysfunction. Arginine increases sperm and egg cell production. The regular intake of barley grass juice can stimulate sexual performance in both men and women, prevent urinary tract infections and act as a powerful diuretic. It is a home remedy for preventing urinary tract infections.

Barley is beneficial to the skin and hair, as it is packed with antioxidants, vitamins, and minerals; it contributes to healthy skin, improves skin elasticity (because of its selenium contents, which are also important for the proper functioning of the pancreas, heart, and immune system), brightens the skin tone and has anti-inflammatory properties. It hydrates the skin, acts as an anti-ageing device and helps reduce the occurrence of acne. Its nutrients and antioxidants promote healthy hair (they promote hair growth, reduce alopecia and restore hair colour).

- **Other uses**: Malt is produced for brewing; it can be used pearled or raw, and roasted-grain mature barley flour is used in breakfast cereals, stews, soups, pastas and noodles. Grains are a coffee substitute, and are used in sauces and baked products. Barley can be used to make porridge, risotto, or a pancake.

  The stems are a source of fibres for making paper, fuel, soil mulch and for other purposes. The seed can be fermented into sourdough and many other fermented foods. It can also be sprouted and added to salads or the sprouted seed juiced and the juice drunk as a healthy drink. Pearl barley is also added to soups. Barley has a soft straw, which is used mostly as bedding for livestock and a feed providing bulk roughage.

  Seeds are taken internally as nutritious food or as barley water (an infusion of the germinated seed in water) and are of special use for babies and invalids.

  It is used in soups, stews, etc. Malt is obtained by sprouting the whole seed and then roasting it. The seed is then ground into flour and boiled in water. The resulting liquid is very sweet and can be used in making beer or other drinks, and as a nutritious sweetener in various foods. The roasted (unsprouted) seed is used as a coffee and a salt substitute.

  Malt can be utilized for brewing, distillation (preparation of beer and other hard liquor such as whisky and brandy), baby food, confectionery, cocoa-malt drinks, and medicinal syrups. It is also considered as a functional food and is used in many bakery products and recipes owing to its high dietary fibre and lower low-density lipoprotein (LDL) content, and is rich in tocols including tocopherols and tocotrienols (known to reduce serum LDL cholesterol through their antioxidant action). A decoction of barley in water called "barley water" is valued medicinally and used for the treatment of inflammations.

  It can be added to soups, salads, stews, and curries due to its rich flavour and is also used to process beer and other alcoholic beverages.

- **Caution**: Seeds are best not given to a nursing mother since this can reduce milk flow.

- **Arabic name**: Shama'a
- **Scientific name**: *Hoya carnosa* (L. f.) R.Br.
- **Common name**: Wax Plant, Hoya, Waxflower, Porcelain Flower
- **Family name**: Asclepiadaceae
- **Growth habit**: Succulent perennial climbing vine
- **Life cycle**: Perennial
- **Part/s used**: Flowers, leaves, and roots.
- **Chemical constituents**: Flowers yielded volatile compounds, viz. methyl butanal, ethylbenzene, o-xylene, p-xylene, benzaldehyde, 6-methyl-5-heptane-2-one, benzyl alcohol, linalool, 2-nonen-1-ol, phenylethylalcohol and 2-(E)-noneal. Stem yielded oligosaccharides A, B, and C (1-3) established as 6-deoxy-3-O-methyl--allopyranosyl(1â†'4)-cymaropyranosyl (1â†'4)-cymaropyranosyl(1â†'4)--cymaronic acid-lactone (compound 1) and 6-deoxy-3-O-methyl-allopyranosyl(1â†'4)--oleandropyranosyl(1â†'4)-cymaropyranosyl(1â†'4)-cymaronic acid –lactone.Volatile compounds from the flowers are methyl butanal, ethylbenzene, o-xylene, p-xylene, benzaldehyde, 6-methyl-5-heptane-2-one, benzyl alcohol, linalool 2-nonen-1-ol, phenylethylalcohol and 2-(E)-noneal.
- **Pharmacological action**: Studies on the plant have suggested anti-ageing, air-purifying and antibacterial properties. It is used for haemolytic crises and for anti-ageing. Its extracts reduce fine lines and wrinkles, improve sagging skin, enhance lifting, and improve skin tone and overall appearance by increasing epidermis thickness, stimulating collagen, and/or inducing lipogenesis. Flowers exhibit a nocturnal emission of their fragrance according to an endogenous circadian rhythmicity, demonstrated by a rhythmical emission for two to three cycles under conditions of permanent illumination.
- **Other uses**: It is an ornamental plant.
- **Caution**: All plant parts are toxic, causing paralysis in cows fed on the plant in Florida.

- **Arabic name:** Batata Hulwah
- **Scientific name**: *Ipomoea batatas* (L.) Lam
- **Common name**: Sweet Potato
- **Family name**: Convolvulaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- Part/s used: Roots and leaves.
- **Chemical constituents**: Citrol, carotenoids, globulin, volatile oil, ebomuin, ketone, insulin, ebomarin, vitamins B, C and D and mineral elements.
- **Pharmacological action**: The plant is nutritive and antibiotic. Leaves are laxatives, antioxidants and anthelmintic. Roots are a source of vitamins. The green juice contains a large number of components for nourishing and circulating the blood, and is detoxicant, restorative, digestive, rich in energy, and tonic. It is effective for the treatment and prevention of ageing diseases.
- **Other uses**: Tuberous roots are edible after being roasted, similar to potato tubers; it is also used in feed for cattle.
- **Caution**: No reports.

Roots

Another cultivar

Ipomoea purpurium

Ipomoea cairica

Ipomoea carnea

Ipomoea sp.

Ipomoea sp.

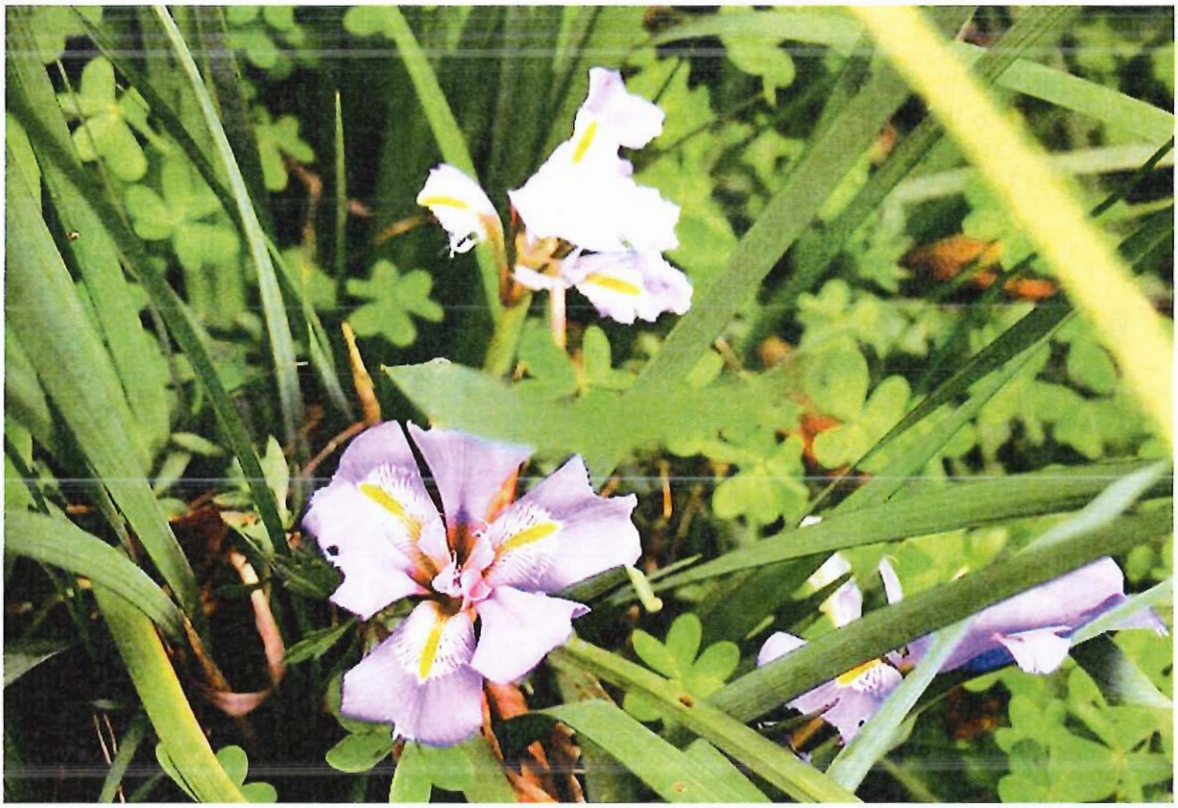
Different *Ipomoea* species cultivated as ornamentals

- **Arabic name**: Sawsan Almanee
- **Scientific name**: *Iris germanica* L.
- **Common name**: German Iris, Orris
- **Family name**: Iridaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: Rhizomes of 2-4 years old.
- **Chemical constituents**: Iridin, irigenin, irisolidone, beta-sitosterol, alpha and beta-amyrin and acetovanillone (in rhizome). Essential oil, glycosides, sugars, resin, starch, mucilage and tannins. It also contains isoflavonoid glycosides, triterpenes, radicals, lipids, iristectorin A, irisxanthone and triterpenoids from the rhizomes, fatty acids including myristic acid in seeds, irigermanal and iridogermanal. A flavone-C-glycoside, swertisin, xanthone glycosides, mangiferin and isomangiferin in leaves and isoflavonoids.
- **Pharmacological action**: The fresh root is a powerful cathartic; its juice is used in dropsy, as an antibacterial, anti-inflammatory, and for lung ailments, coughs and hoarseness. It is valued for the pleasantness of its violet-like perfume. Isoflavones are cancer chemopreventive and there is anticancer activity from iridal triterpenes. □-irigermanal in root extract exhibits potent antiulcer activity.
  The root is diuretic and has been used for water retention and edema. The plant is stomachic, stimulates digestion, improves appetite, and relieves colic. It is also used for teething rings, as a purgative, expectorant, and as an excellent remedy for loosening mucus and excess phlegm. It also helps relieve colds, bronchitis, congestion, and sore throats. It heals minor wounds, frostbite (leaf extract), helps teething (dried roots), is a laxative and reduces fever and halitosis (rhizome). Sometimes, the juice is used as a cosmetic and for the removal of skin freckles.
  The fresh root is emetic and anti-diarrhoeal. The dried powder is a good snuff. The dried root is mainly used in sachet powders and to flavour dentifrices and toothpowders. Orris strengthens the odour of other fragrant bodies and is used as a fixative in perfumery.
  Dry rhizome is given to babies to chew as a sedative and is an emollient cream for the breast.
- **Other uses**: Orris root is sometimes put into rinsing water in laundries and imparts a refreshing and fragrant scent to the linen. It is also used to scent drugs, cosmetics and toothpaste. Dried rhizomes (orris root) can be

ground up and are used as a fixative for potpourri, herb pillows and sachets. The plant is an ornamental species in gardens.

- **Caution**: The fresh root is strongly purgative and can induce nausea, vomiting, and colic, especially when taken in large doses. The plant can also cause severe gastrointestinal problems. Some people may exhibit skin irritation as well. As with any home remedy, the care of an experienced practitioner is advised. The leaves, and especially the rhizomes of this species, contain an irritating resinous substance called irisin. If eaten, this can cause severe gastric disturbances. Plants can cause skin irritations and allergies in some people and should not be tried at home, as they can be harmful if taken internally and act as a skin irritant.

Iris germanica



- **Arabic name**: Sawsan
- **Scientific name**: *Iris versicolour* L.
- **Common name**: Blue Flag, Harlequin Blueflag, Larger Blue Flag, Northern Blue Flag, Poison Flag
- **Family name**: Iridaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: Rhizome
- **Chemical constituents**: The rhizomes contain iridin glycoside, triterpenoids, salicylic and isophthalic acids, small amounts of aromatic oil, resin, oily resin and tannic acid.
- **Pharmacological action**: It is a cholagogue, laxative, diuretic, dermatological agent, anti-inflammatory, lymphatic, astringent (liver), depurative, stimulant, anti-emetic in small doses and emetic in large doses and alterative. It can dissolve fatty membranes. The plant restores losses of tonicity to involuntary muscle structures. An oral administration of 20 mg/kg of the plant increased plasma levels of free fatty acid and glycerol and therefore it can mobilize fat tissue. It is used for chronic skin, liver and gallbladder disorders, headaches, migraines, constipation, and poor digestion, and enlarges the lymph and thyroid glands and spleen.
  Traditionally, the plant is used for duodenal catarrh with jaundice and light-coloured stools, cholera infantum, morbus and diarrhoea. It is used in small doses for dysentery and gastralgia, oral aphthae, reflex muscular pain involving viscera of GIT and the pancreas, goitre and any soft glandular enlargement, ovary and uterine disorders, chronic renal disease, ascites, anasarca, hydrothorax, and hydropericardium. It is used in high doses for dropsy, leucorrhoea, dysmenorrhoea, rheumatism, gonorrhoea, spermatorrhoea, prostatorrhoea, dermal conditions such as syphilis, herpes zoster, rupia, impetigo, lepra, and pustules on the face and scalp.
- **Other uses**: It is a wild and cultivated ornamental species with nice light-blue flowers.
- **Caution**: The sap can cause dermatitis in susceptible individuals.

- **Arabic name**: Jacranda
- **Scientific name**: *Jacaranda mimosifolia* D. Don
- **Common name**: Jacaranda, Mucakaranda (Kikuyu), Omosaria (Kisii), Fern tree, Black Poui.
- **Family name**: Bignoniaceae
- **Growth habit**: Shrub or Tree
- **Life cycle**: Perennial
- **Part/s used**: Leaves, essential oils derived from the leaves, other oils from the bark, and seeds.
- **Chemical constituents**: The main chemical constituents identified in the family are naphthoquinones, iridoid glucosides, alkaloids, flavones, triterpenes, polyphenols, tannins and seed oils.
  The main classes of secondary metabolites identified in genus *Jacaranda* are triterpenes, quinones, flavonoids, and acetonides. Leaves contain carobin (0.16%), a crystallizable, faintly bitterish, inodourous principle, steocarobic acid (0.1%), carobone (2.66%), a balsamic, resinous acid, and caustic alkalies; caroba resin (3.33%); caroba balsam (1.44%), caroba tannin (0.44%), and a bitter principle (2.88%); albumen, starch, etc. The bark contains carobin (0.3%), caroba resin (0.5%), the bitter principle (0.28%), and carobaretic acid (0.2%). The leaves and flowers contain jacaranone, verbascoside and the flavonoids scutellarin-7-O-glucosylmethylesters, apigenin-7-O-glucosyl-methylester, luteolin-7-O-glucoside and isovitexin 9.
- **Pharmacological action**: The plant is used for gonorrhoea, syphilis, hepatitis, leukaemia, skin infections, and acne. It is an antiseptic, antibiotic and treats bacterial infections. The plant is used to fight fungal and bacterial infections. The application of jacaranda extract on syphilitic sores helps them heal fast. It controls the painful urination accompanied by pus in gonorrhoea patients. It also fights against epileptic seizures.
  In folk medicine, flowers, leaves and bark are used to treat hepatitis and varicose veins. It treats leukaemia. Hot jacaranda leaf baths treat wounds and skin infections. The bark has been used in the treatment of wounds and dermatitis. Astringent and diuretic properties have also been assigned to the bark extracts. The plant treats syphilitic ulcers and urinary tract problems. The ground bark decoction is used against venereal diseases, rheumatism and purifies the blood. The plant possesses antioxidant, antihypertensive, antimicrobial and anti-tumour activities. The leaves taste bitter-astringent. Water extract shows higher antimicrobial action *in vitro* against *Bacillus cereus* and *Escherichia coli* than gentamicin sulfate. The extract also acts against *Staphylococcus aureus in vitro*. It possesses a wide array of secondary metabolites of medicinal value which offer higher antioxidant, antifungal and antimicrobial activities than gentamicin sulfate. For local use, Rx

jacaranda leaves (powdered) are also used for mental enfeeblement, voracious appetite, and epilepsy. The tree is used to treat hepatitis.

The juice from the leaves cures health problems associated with venereal diseases. The leaf extract or juice can also be applied externally for relief from sores or ulcers caused by venereal diseases. Bark infusion can be used internally for relief from syphilitic sores. The leaves' and bark's volatile oil is effective in the treatment of buboes (swelling in the lymph nodes in the groin or underarm areas characterized by blisters). The dried leaves are used in an ointment for healing wounds. Leaves are also used as a vulnerary, and their infusion is given as a pectoral.

An infusion of the bark is used as a lotion for washing ulcers. Bark and leaves are used for syphilis and blennorrhagia. Genus *Jacaranda* has been traditionally used in treating skin disorders, venereal diseases, leishmaniasis, colds and rheumatism. The main pharmacological activities reported for genus *Jacaranda* are antioxidant, antidepressant, antimicrobial, anticancer, anti-leishmanial, anti-protozoal, hypotensive and anti-hypertriglyceridemic activities. It is hypothermic, cardiovascular depressive, and has (–) α-adrenergic receptors.

The leaves are the medicinal parts. The odour is slight, and the taste bitter-astringent. It is efficient in treating bacterial infections as well as gonorrhoea and syphilis, since about one-third of the world's population is allergic to penicillin – the primary drug used in fighting these venereal diseases as well as other infections. In folk tradition, the flowers, leaves and bark are used to ease neuralgia and varicose veins. Jacaranda tree helps in the treatment of acne.

- **Other uses**: It is an ornamental tree that has beautiful and long-lasting blue flowers. It is a beautiful garden tree and its beauty is enhanced manifold when the tree is in full bloom. The fragrant wood is locally used for tool handles. Blue Jacaranda is used in medicine and industry. Its wood, with a cream and pink tone and pleasant smell, is used in cabinet making and carpentry, especially in the automotive industry for luxury cars. The wood is light and slightly fragrant. There are purple to greyish streaks in its tissues, which make the grain attractive. The tree is generally not felled for its wood or timber. The branches and stem of the dead and dry trees are generally utilized as firewood. The trees can reach a good height, and if no longer required on the streets are converted into timber and used for cheap furniture, ceiling and floor planking.

  The plant is gathered from the wild for local use as a medicine, fuel and source of timber. Its main value is as an ornamental tree and it is widely grown in urban areas worldwide. It also has medicinal properties. However, these uses cannot compensate for this plant's overall negative impacts.

- **Caution**: The flowers are beautiful, but they are very poisonous and so should not be eaten or cooked under any circumstances. The seeds are poisonous if ingested, and just about all parts of the plant are poisonous if ingested. For some people, handling the plant may cause skin irritation, and some people have an allergic reaction to the flowers' pollen.

- **Arabic name**: Yasmin Abyad, Anbar, Yasmin Baladi
- **Scientific name**: *Jasminum grandiflorum* L.
- **Common name**: Spanish Jasmine, Royal Jasmine, Catalonian Jasmine
- **Family name**: Oleaceae
- **Growth habit**: Shrub Climber
- **Life cycle:** Perennial
- **Part/s used**: Whole plant, jasmine oil, and flowers.
- **Chemical constituents:** Flower contains 0.15-0.45% of its fresh weight from essential oils made from 13-24% benzyl acetate, jasmon (jasmine smell), linalool, and 1 1% indole fatty acid, ascorbic acid, and nucleic acids, protein, amino acid and carbohydrate, cis-3-hexanol, 2-vinylpyridine, myrcene, benzyl alc., p-cresol, Me benzoate, benzyl cyanide, □-terpineol, linalyl acetate, geraniol, indole, eugenol, Me dihydrojasmonate, Me anthranilate, cis-jasmone, Me N-methylanthranilate, vanillin, nerolidol, cis-3-hexenyl benzoate, farnesol, benzyl benzoate, Me palmitate, isophytol, geranyllinalool, Me linoleate, and phytol. There are over 100 constituents of the oil, but the main chemical components are benzyl acetate, linalool, benzyl alcohol, indole, benzyl benzoate, cis-jasmone, geraniol, methyl anthranilate and trace amounts of p. cresol, farnesol, cis-3-hexenyl benzoate, eugenol, nerol, feosol, benzoic acid, benzaldehyde, y-terpineol, nerolidol, isophytol and phytol.
- **Pharmacological action**: The oil is a very expensive and valuable natural oil used in perfumes, cosmetics (dry and liquids) and facial soap. Jasmine is beneficial for the skin, reducing problems such as dry, greasy, irritated or sensitive skin, muscle spasms, sprains, catarrh, coughs, hoarseness, laryngitis, uterine disorders, labour pains, frigidity, depression, nervous exhaustion, and digestive and emollient problems. It is used for abdominal pain, burns, colon colic, dysentery, migraine, paralysis, wounds, ulcers, constipation, flatulence, skin diseases, odontalgia, stomatitis and dysmenorrhoea. The oil relaxes, soothes, and is good for stress and general anxiety. The oil is ideal for the skin; although it is very expensive, it is perfect for skin care.
  In folk medicine, the oil is used for purulent skin, burns, skin freckles and rheumatism ailments. It is used in the form of jasmine adipose that is re-extracted using alcohol to obtain pure oil. The oil percentage in jasmine fat is 50%, and a metric tonne of flowers produces 2.2-2.5 kg of pure oil.
- **Other uses**: Distilled water is used in the food industry to provide sweets and drinks with the needed aroma and taste. It is also used as an ornamental plant in private and public gardens.
- **Caution**: An excessive use of oil and at high doses may cause the skin's epidermal cells exposed to direct sunlight to burn.

- **Arabic name**: Yasmin Aratli
- **Scientific name**: *Jasminum humile* L.
- **Common name**: Yellow Jasmine
- **Family name**: Oleaceae
- **Growth habit**: Shrub Climber
- **Life cycle:** Perennial
- **Part/s used**: Flowers, root, leaves, and seeds.
- **Chemical constituents**: Fixed oil in seeds is mainly constituted of 9-Z-octadecenoic acid methyl ester (30.19%), 9,12-Z,Z-octadecadienoic acid methyl ester (23.96%), hexadecanoic acid methyl ester (15.853%), and methyl stearate (13.22%). Phenolics in flower extracts.
- **Pharmacological action**: The flowers are astringent and tonic for the heart and bowels. Flowers' paste is a cure for intestinal problems. Flower extracts have large amounts of phenolic compounds and exhibit high antioxidant and free radical scavenging activities. The roots' juice is used against ringworm. The milky juice of the plant is used for destroying the unhealthy lining walls of chronic sinuses and fistulas. The leaves' extract has antibacterial properties. The plant is effective in scavenging free radicals and thus has antioxidant activity, and could be used as an effective source against bacterial diseases.
- **Other uses**: It is an ornamental plant. The leaves are used as a condiment. A tea is made from the leaves and bark.
- **Caution**: No reports.

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In a public garden

- **Arabic name**: Yassmin
- **Scientific name**: *Jasminum revolutum* Kobuski [*Jasminum humile var. revolutum* (Sims)]
- **Common name**: Jasmine
- **Family name**: Oleaceae
- **Growth habit**: Climber Shrub
- **Life cycle**: Perennial
- **Part/s used:** Flowers, roots, leaves, buds and newly opened flowers.
- **Chemical constituents:** The main chemical components are benzyl acetate, linalool, benzyl alcohol, indole, benzyl benzoate, cis-jasmone, geraniol, methyl anthranilate and trace amounts of p. cresol, farnesol, cis-3-hexenyl benzoate, eugenol, nerol, ceosol, benzoic acid, benzaldehyde, y-terpineol, nerolidol, isophytol and phytol. It is also constituted of tannins, fats, silicon, iron, glucosides, and calcium oxalate. The essential oil from the flowers is similar to *J. grandiflores* constituents including alkaloids, glycoside, and secoiridoid glucoside named jasminoside, flavonoid, terpenes, resin and salicylic acid. In roots, there is dotriacontanoic acid, dotriacontanol, oleanolic acid, daucosterol and hesperidin. Flavonoid glycosides are also found in leaves.
- **Pharmacological action**: The plant is an aphrodisiac, antibiotic, anti-fungal, diuretic and emmenagogic. The essential oil is used in aromatherapy. It is specifically used in dermatology as an antiseptic or anti-inflammatory agent, calming and soothing without being soporific. It has been indicated to be used for depression and stress, some respiratory conditions and for sensitive skin problems. Jasmine has a reputation as an aphrodisiac and is used for all kinds of sexual problems.
- **Other uses**: The plant is an ornamental in gardens.
- **Caution**: The oil is an irritant for some people when used too frequently or in high concentrations. A major component of jasmine is benzyl acetate (25%), which is known to be absorbed through the skin and to be an allergic sensitizer. Those who show allergies to spicy food, perfumes and cosmetics are most likely to react. In any case, only tiny amounts should be used.

- **Arabic name**: Fill, Full
- **Scientific name**: *Jasminum sambac* (L.) Ait.
- **Common name**: Arabian Jasmine, Sampaguita, Melati Putih.
- **Family name**: Oleaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Oil, roots, and flowers.
- **Chemical constituents:** Jasmine oil's main constituents are benzyl, nerol, terpineol, linalyl acetate, methyl anthranilate, jasmone and farnesol. Caryophyllene oxide, a mixture of benzyl benzoate and farnesyl acetate, Me isoeugenol, squalene, sitosterol and iridoidal glycosides. Sambacosides A, E and F, tetrameric iridoid glucosides, 9'-deoxyjasminigenin, jasminin, 8,9-dihydrojasminin (a new secoiridoid glucoside).
  Flowers contain 37 compounds including lignan-secoiridoid glucoside, ethyl acetate, 3-methylcyclopentene, 2-methylhexane. linalool and cis-3-hexen-1-yl acetate. Benzyl acetate, Me benzoate, Me salicylate, myrcene, □-fenchene, limonene, □-3-carene, cis-linalool oxide, and trans-3-hexenyl butyrate. Quercitrin, isoquercitrin, rutin, quercetin-3-dirhamnoglycoside, kaempferol-3-rhamnoglycoside, mannitol, □-amyrin, □-sitosterol, and sucrose. Dotriacontanoic acid, dotriacontanol, oleanolic acid, daucosterol and hesperidin were elucidated in roots.
- **Pharmacological action**: It is an aphrodisiac. The root is used to treat headaches, insomnia, and pain due to dislocated joints and broken bones, and has anaesthetic properties. Several Jasminium species have been used for cancers, dry or sensitive skin and tiredness. Its oil is useful for anger, coughs, relaxation and tension. It is used as a massage oil in the bath for addictions, postnatal depression and muscle pain and as a cream or lotion for dry or greasy and sensitive skin, as well as assisting with stretch marks and scars. Young boiled leaves and their infusion are used to treat gallstones. The root is boiled and the infusion is used to treat diabetes mellitus.
- **Other uses**: It is an ornamental and aromatic plant. Jasmine oil is used in perfumes.
- **Caution**: No reports.

Non aromatic plant

Other aromatic Jamine

- **Arabic name**: Naksh, Jooze, Ein Al-Gamal
- **Scientific name**: *Juglans regia* L.
- **Common name**: English Walnut
- **Family name**: Juglandaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Leaves, leaflets, seeds, fruit peel, immature fruits, and bark.
- **Chemical constituents**: Quinones and oils. Seeds contain oil (77%) made from palmitic, stearic, oleic, linoleic and linolenic fatty acids, protein (21%), starch (7%), and vitamins A, B and C. Immature fruits contain vitamin C 2500 mg% but vitamin and bitter materials percentages are much more reduced in mature fruit. Leaves and fruit shell contain aroma, inositol, tannins, and naphthoquinone as a base for hydronaftolenon that oxidizes into juglone which gives a black colour to fruit peel and leaves. Acids and minerals are also present at high percentages. The leaves contain carotene (30 mg%), vitamins C (285-1300 mg%), P and PP, volatile oil, tannins, juglone which possesses antimicrobial properties, linolenic, alpha-linolenic and other organic acids, essential oil, the glucoside hydrojuglone and the bitter compound juglone klandin. Oil, tannic acid, fatty acids such as linolenic acid and a-linolenic are also present. The fruit's shell, leaves, and seeds may contain naphthoquinone juglone (with the exception of the nuts).
- **Pharmacological action**: Walnut is an antiseptic, aphrodisiac, tonic, antibacterial, anti-inflammatory, astringent, demulcent and depurative. It is used against halitosis and in tooth and gum care, as an anti-cholesterol and anti-diarrhoeal, and is for fungal infections, headaches, rheumatism, uterine and skin disorders, eczema and nervous problems.

  The leaf tincture alone or with branches is used to treat elephantiasis, epilepsy and skin diseases. It heals wounds. The oil is used in ointments for skin tuberculosis and as a sedative. A decoction of the leaves is a cure for tuberculosis, diabetes and pharyngitis. It has antiseptic, antifungal and antispasmodic properties, and is a hair tonic and skin conditioner. It lowers blood pressure, and is used for rashes and as an astringent and diaphoretic.

  In folk medicine, the plant is used in stomach ache, internal ailment and skin treatments. Its tincture and fresh leaf extract are used in the bath to treat certain ailments. Leaf extract promotes the appetite, cures constipation, confers strength and heals wounds. External cortex (peel) contains a high percentage of acids and minerals, and its infusion is used as a black hair dye; the cortex is also used in drinks because of its bitter

taste. The leaves are anthelmintic and tonic for the digestive system. Its ointment is used to treat chronic skin pests and sores. The internal bark is an effective laxative. An astringent leaf infusion is used to treat skin diseases, bone swelling, eye disease and ear gum. It is preferred to purify the blood, and in swellings and enlargements of the lymphatic gland after syphilis infections. It is also used to prevent bleeding after surgery. Small immature fruits are carminative, used for coughs and are anthelmintic. An infusion of green fruit peels is anthelmintic and tonic. The seed peel is anti-inflammatory.

- **Other uses**: The fruit's pulp contains large amounts of fatty oil, which is widely used in the food industry. The oil is used in cooking, in artists' colours and in soap. Walnut wood is hard-flexible, expensive and of high value for home furniture. A black dye is produced from the fruit peel. Immature small fruits are used as a spice.
- **Caution**: No reports.

- **Arabic name:** Ar'ar, U'rur
- **Scientific name**: *Juniperus communis* L.
- **Common name**: Common Juniper, Juniper
- **Family name**: Cupressaceae
- **Growth habit**: Creeping shrub
- **Life cycle:** Perennial
- **Part/s used**: Berries, leaves, essential oil and root bark.
- **Chemical constituents**: Fruits contain resin (10%), essential oil (0.5-2%) of the major compounds □-pinene, □-pinene, borinol, inosetol, flavones glycosides, juniperin, □-cadinol, □-3-carene, sabinene, myrcene, □-phellandrene, limonene, and D-germacrene. It also contains monoterpene hydrocarbons, both oxygenated ones and sesquiterpenoids. Juniper camphor, condensed tannin, neolignan glucosides (junipercomnosides C and D) and two new phenylpropanoid glycosides (junipercomnosides E and F), neolignan glycosides (junipercomnosides A and B), proanthocyanidins, flavonoids, lignan desoxypodophyllotoxin and its isomer desoxypicropodophyllotoxin, diterpene acids, resin and vitamin C. More than 60 compounds are found including myrecin, sapanin and ceneiol in addition to tannic acid. The fruit contains fixed oil (2%), aromatic oil (2%), resins, almost 30% invertase sugar, cadenin, phenols, cresol, and aromatic oil.
- **Pharmacological action**: The plant is antiseptic, diuretic, carminative, tonic, stomachic, anti-rheumatic, and a snake repellent containing essential oils. It is a disinfectant for the urinary system, and is used for cystitis, warming the digestive system, for colic and as a stomachic. It is useful for chronic arthralgias, emmenagogue and gout. A fruit decoction is anti-diarrhoeal, anti-cough, antiasthma and used against worms. It is also used for burns and prevents grey hair. A fruit decoction or infusion is used for urinary system inflammations, digestion disorders and stimulates stomach secretions. The oil is antiseptic, and is used as an ointment for rheumatism; extracts are used in the food industry and veterinary medicine. The oil improves kidney function and has antimicrobial activity, is useful for chronic coughs, and is diuretic and anti-inflammatory. A leaf decoction is anti-diarrhoeal and dried powder is used for infant arthritis and widens the urine tracts. A branch

decoction is one of the most commonly used drugs for arthritis and muscle rheumatism. A wood decoction cures chronic skin diseases, and a fruits infusion or cooked fruit is a tonic for the immune system, especially for diabetics and tuberculosis patients suffering from weight loss and anorexia.

The perfume is used for spurring the burning of body fat, may be a detoxifier and cleanser, reduces dermatitis, eczema, and acne, and promotes better nerve and kidney functions. Berries act as a strong urinary tract disinfectant, a cure for diabetes and a contraceptive.

It is used in the treatment of digestive, kidney and bladder disorders. Ripe fruits treat cystitis, digestive problems, chronic arthritis, gout and rheumatism. Externally, the essential oil has a slightly warming effect upon the skin and is thought to promote the removal of waste from underlying tissues. It is helpful when applied to arthritic joints. The application of the fruits' ointment on wounds prevents irritation by flies.

The essential oil is used in aromatherapy. Astringent oil is used for baths and massages for cellulite. It has a cleansing effect on the body, and is used in many masculine perfumes, aftershaves and colognes; it also has a calming effect on the emotions, and strengthens the immune system.

In folk medicine, the oil is used for eczema and psoriasis. It is useful as a purgative for the digestive system and for flatulence and fullness, and strengthens the pulse and breathing in addition to diuresis.

- **Other uses**: Juniper is used as spice and aroma to flavour birds and meat in general. The oil is used to flavour cheese. The distilled and fermented fruits produce a sort of wine known as "Genn", which has a juniper oil taste and smell. The oil prepared from wood after distillation is widely used in veterinary medicine and in curing skin diseases such as animal scabies and eczema. It is used in a mixture of essential oils and their components as insect repellents and insecticides. Juniper is an ornamental creeping plant in gardens.
- **Caution**: Juniper causes problems in animals, and should be avoided in cases of renal disease and nephritis since it may destroy kidneys. Toxicity symptoms include haematuria and enteritis. Essential oil is never to be taken unless under private medical supervision. Large doses of the fruits can irritate the urinary tract, and should not be used internally by pregnant women since it may cause abortion. In addition, fruits increase menstrual bleeding and therefore should not be used by women with heavy periods.

- **Arabic name**: Khass
- **Scientific name**: *Lactuca sativa* L.
- **Common name**: Lettuce
- **Family name**: Compositae / Asteraceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: The whole plant, latex, flowering stems, leaves, and roots.
- **Chemical constituents**: Fat, proteins, fibres, minerals including iron, phosphorus, calcium, copper, iodine, chlorine, arsenic, zinc, magnesium and cobalt. The plant also contains vitamins A, B and C. Leaves contain a high percentage of sugars, small amounts of mineral salts such as potassium, manganese, phosphorus, calcium and iron. Oil is rich in vitamin E and carotene. Lactucarium. In seeds, 22-hydroxytaraxerone, □-amyrin, pseudotaraxasterol, □-sitosterol, □-sitosterol 3-O-□-glucoside, chrysoeriol 7-O-□-glucopyranoside, luteolin 7-O-□-glucopyranoside, quercetin 3-O-□-glucopyranoside, and apigenin 7-O-apiofuranosyl-(1-2)-□-glucopyranoside.
- **Pharmacological action**: It is anti-inflammatory, analgesic, anxiolytic, sedative, anticonvulsant, antioxidant, narcotic, aphrodisiac, anodyne, antispasmodic, carminative, diuretic, emollient, expectorant, febrifuge, galactagogue, hypnotic, hypoglycaemic and parasiticide. The plant is rich in a milky sap containing lactucarium that has the effects of feeble opium. It is taken internally for the treatment of insomnia, anxiety, neuroses, hyperactivity in children, dry coughs, whooping cough and rheumatic pain. The sap is applied externally in the treatment of warts. Lettuce is a hair tonic, and is useful for fertility and impotency because of its vitamin E content. It is a tranquillizer because of the lactucarium. It is an emollient, pain-calming, blood cleaner, laxative and good for constipation because of its high fibre content. It is a sight tonic because of the vitamin A. It moisturizes the stomach, is diuretic, lowers the body temperature, and is anti-cough, sedative, antacid (especially seeds), calming and induces nausea. The plant is used for arthritis and burns ailments. Fresh leaves poultices are used locally to relieve ailments, and to remove tumours and inflammations. Lettuce is used as a mask to cure facial acne and thirst, to protect against sunstroke, as an anti-allergen and an antihistamine. It removes colds from sensitive noses, is used for psychiatric diseases and relieves stresses and depression. Its continuous use cures madness and epilepsy. The external strong green leaves are rich in iron and chlorophyll, cure blood debility (anaemia) and strengthen the body. The chlorophyll removes halitosis,

bad odour and smell of body perspiration, and heart ailments. The internal yellowish leaves are useful for curing heartbeat ailments and enlargement. Lettuce is a galactagogue, appetizer in salads and spices, a liver stimulant and useful against hepatitis.

The oil shows sedative properties, and lettuce leaves cooked with olive oil are used as poultices or plasters for furuncles and pimples. A leaf decoction, added to aromatic water, is used for tired eyes and cures conjunctivitis. Lettuce is a sedative, scarfskin emollient and cures insomnia. It is beneficial against fertility disorders, sclerosis, and ageing debilities. A lettuce decoction is used as a face wash to remove acne and pimples and to cure scorpion and snake stings, and high blood sugar levels can be reduced by chopping a certain amount of lettuce leaves in addition to a small amount of onion, leek and parsley.

In folk medicine, oil is used as a tranquillizer to relieve pain, purify the blood, and strengthen nerves and eyesight. It is useful in the treatment of whooping cough, insomnia and as a treatment for diabetes. It is a cure for eye inflammation, lid swelling and is included in hair oil compositions.

- **Other uses**: It is a vegetable crop, and is used mainly in salads and eaten fresh, or drunk as juice.
- **Caution**: Latex is poisonous, and compositae dermatitis has been reported to be aggravated by excessive lettuce consumption.

Another cultivar

Lettuce field

- **Arabic name**: Menna Shujayri, Lantana, Umm Kulthoom
- **Scientific name**: *Lantana camara* L. Moldenke
- **Common name**: Lantana, Spanish Flag, West Indian Lantana
- **Family name**: Verbenaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: The whole plant, leaves, and roots.
- **Chemical constituents**: Terpenoids including lantadene A, lantadene B, and lantanilic acid. Oleanolic acid in roots, triterpenoids, flavones, phenolic compounds, essential oil made from □-caryophyllene, sabinene, □-humulene, 1,8-cineole, (E)-nerolidol, □-cadinene and □-guaiene. The oil is characterized by a high percentage of sesquiterpenes. The major constituents in the fruits' oil are palmitic acid, stearic acid and germacrene-D, while the major constituents of stem oil are palmitic acid and stearic acid. Pentacyclic triterpenoids, lantanoside, lantanin, and lantanone. Linaroside, lantadene A and B, keitin, pentacyclic triterpenoids, quinine and camarinic acid are found in the aerial parts. Volatile oils are in leaves and flowers, a steroid and lancamarone are in leaves, caryophyllene-like bicyclic terpene, a-phellandrene and lantanine are in the bark.
  The plant also contains alkaloids, phenolics, terpenoids and other minor compounds such as phytosterols, saponins, tannins, phycobatannin, steroids, sesquiterpenes, oleanolic acid and protein.
- **Pharmacological action**: The plant is antimicrobial, a histamine inhibitor, a radical scavenger, an allergy inhibitor, anti-rheumatic and anti-malaria. Leaves are useful for bites of certain animals, the steroid lancamarone is a fish poison and cardiotonic, and lantanin is antipyretic and antispasmodic; it is also a hepatoprotective triterpenoid, refrigerant, anti-febrile, cooling natured, anti-phlogistic, and anti-dermatoses. In addition, it is haemostatic, antiseptic, antispasmodic, vulnerary, diaphoretic, carminative, anti-inflammatory and has antimicrobial activities. It is also effective as an anti-hyperlipidemic, anti-tumour, and cures the liver and gastroenteritic disorders. The plant cures tetanus, rheumatism and malaria. It is used in first aid kits for scorpion stings, as well as for colic and chest diseases and is an expectorant. The oil is externally excitant, anti-poison and antipyretic. It is also used for skin diseases and itching.
- **Other uses**: A dye is obtained from the flowers. Extracts and triterpenoids have larvicidal activities, the essential oil of the leaves is used for storage materials' insect control, and it has nematicidal and herbicidal effects.

❖ **Caution**: The plant is extremely toxic to humans and animals, especially the berries. It is never to be used without the full supervision of a practitioner. This toxicity is due to the presence of the atropine derivative "lantanine". Eating these plants, especially in large amounts, is expected to cause effects to major body organs such as the liver, heart and kidneys. They are known to cause problems in animals. Livestock poisoning occurs on grazing after prolonged stall feeding and during fodder scarcity or drought periods. The toxic chemicals are terpenoids, lantadene A, B, C and D, and icterogenin. The leaves and berries are poisonous, and the ingestion of lantana foliage decreases luminal motility and results in sluggishness, weakness, bloody diarrhoea and, in severe cases death, in 2-4 days. Luminal motility causes constipation and impaction as the animals become anorectic and unable to defecate. Sometimes, the afflicted animals present photosensitization with swollen ears and eyelids.

Plants with different flower colours

- **Arabic name**: Ghar, Rand
- **Scientific name**: *Laurus nobilis* L.
- **Common name**: Green Bay Tree, Laurel, Kafur, The Bay Laurel, Sweet Bay
- **Family name**: Lauraceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: The oil, leaves and fruits
- **Chemical constituents**: Essential oil (0.8-3%) is constituted of 1, 8-cineole (22.8%), linalool (12.5%), □-terpinyl acetate (11.4%), and methyleugenol (8.1%). □-pinene, camphene, □-pinene, myrcene, □-phellandrene, d-limonene, □-terpinene, borneol, terpene-4-ol, thujene, p-cymene, terpinolene, camphor, α-terpinyl acetate, □-selinene, Me-eugenol, acetyleugenol. Acylated kaempferol glycosides, (4S) (-)-□-terpineol (80%) followed by sabinene. Volatile oil, lignans, d-□-tocopherol, eucalyptol, α-and β-pinenes, phellandrene and geraniol from plant leaves. Leaves also contain flavonol glycosides, periodic acid, fixed oil, tannin, chlorophyll and bitter materials. Both essential and fatty oils are present in the fruit. The fruit contains up to 30% fatty oils including oleic (30.2%), lauric (25.6%), linoleic (20.0%), and palmitic (13.1%). In addition, 196-hydroxyl ketone-free proline, sterols, mono-and sesquiterpenoids (3-4%), and alkaloids were reported. Anthocyanins, catechins, proanthocyanidins and rutin are also present.
- **Pharmacological action**: The plant is anti-arthritic, a digestive tonic, anti-diabetic, antioxidant, antiseptic, antimicrobial, anti-rheumatic, parasiticide, emmenagogue, carminative, stimulates appetite, soothes itchy skin, diaphoretic, excitant, emetic, narcotic and stomachic. It is also used for hysteria, amenorrhoea and arthritis, to ease childbirth and expel afterbirth, induce menses (periods), and for flatulent colic, high blood pressure, plant poisons, colds, coughs, lung disorders, chest problems, removing obstructions, bruises, earache, sprains and in perfumery.
  At high concentrations, lauroside B is an inhibitor of human melanoma (skin cancer) cell proliferation.
  Leaves and fruits have anti-inflammation and hypoglycaemic effects. The oil is used for hysteria, rheumatism, scabies and itching. Leaf powder and oil are insect repellents, and the leaves are used against skin parasites. Laurel relaxes the stomach and its fat is beneficial for poisons. Its oil is a relaxant, sedative and externally used in plasters for ramps. It is an excitant and antiseptic. The leaf maceration is digestive, astringent and useful for uterus and bladder ailments, insect stings, ear pains and hearing weakness. It is also used for respiratory system diseases and as an ointment or fruit juice for rheumatism pains. The oil in

ointments and balsams is used for neural ailments, arthritis and furuncles. Laurel is a stomach disinfectant, carminative and digestive. Leaves impregnate is used for sores disinfection and lung inflammation. Cooked laurel leaves in vinegar are beneficial for toothache. A drink of dry orange peel and laurel leaves is a tonic and digestive. A leaves decoction overcomes headache, and an infusion of leaves is used for flatulence, hysteria, indigestion, pain, liver sclerosis, asthma and gingivitis. Its aroma, infusion and essential oil are analgesic and anti-inflammatory, and have an effect on the formalin-induced edema. Powders or extracts prevent Helicobacter pylori that cause gastritis, gastric and duodenal ulcers.

Kaempferol coumarate acts against the dietary carcinogen 3-amino-1-methyl-5H-pyrido [4, 3-b] indole (Trp-P-2). There is a gastroprotective effect of the seeds on ethanol-induced gastric ulcers in rats. Shampoo and hair lotion are designed to prevent the oiliness of hair and hair falling out as well as to stimulate hair growth.

In folk medicine, the oil helps to boost the immune system, cures viral infections of cold and flu, is a sedative and calming, and is a good massage oil.

- **Other uses**: The leaves are used as a food (spice), in the preparation of food dishes, for tea (when dry) and as a spice in different foods or to flavour cooked food. The oil is used in laurel soap production, and is added to containers of liquorice and dried materials to prevent insect infections. It is also added to meat, pressed or cooked fish to improve their taste and also to alcoholic drinks. Laurel oil or butter is used in the veterinary industry as an insect repellent and for the treatment of parasites on animals. The oil is also used to prevent silverfish damage to books and clothes.

  The oil adds an aromatic flavour for food and soap manufacturing. The essential oil is used for its fragrance in cosmetics and perfumes. It is also used in preparations for plant protection against greenhouse whiteflies, and in insect repellents and insecticides. The leaves are used as a condiment.

- **Caution**: The berries have been used to induce abortions, so are not suitable during pregnancy. Leaves and berries contain methyleugenol. Leaves' essential oil contains alkenyl benzenes (eugenol 1.44-2.03%, methyleugenol 1.7-11.8%) and eucalyptol (34-53%).

The whole plant

- **Arabic name**: Lawend, Khuzam, Lavender, Lawinda, Khairy Albar
- **Scientific name**: *Lavandula officinalis* L.
- **Common name**: Lavender
- **Family name**: Labiatae / Lamiaceae
- **Growth habit**: Sub-Shrub
- **Life cycle**: Perennial
- **Part/s used**: Flowers, stems, and flowering tops.
- **Chemical constituents**: Volatile oil (0.5-2%), tannins, bitter material, alinyl acetate and pigments. Medicinal oil contains not less than 30% esterates, alcohol, terpenes such as pinen, limonene, sesquiterpenes, cineol, linalool, neroil, brinol, tannins and resins. Flavones, tannic acid and coumarins are also present.
- **Pharmacological action**: The plant is aromatic, carminative, spasmolytic, antidepressant and anti-rheumatic. Its oil is a rubefacient, antispasmodic, and used in gall bladder treatment. It is a sedative, tonic and antifungal; it cures stress headaches and clears depression. Externally, the oil's stimulating liniment eases rheumatism pains. It is used in perfumes, colognes, toilet articles, masks unpleasant odours in medicines, and may be beneficial for burns, rashes, psoriasis, and insomnia. It is hypotensive, calming, anti-inflammatory, analgesic, anti-infectious, cardiotonic, and anticoagulant. It prevents scarring and relieves headaches, abdominal colic, and gastritis, and is a circulatory stimulant. Leaves are used for colon problems, urinary infections, draft skin affections, wounds and burns. Roots are tonic, disinfectant, diuretic, sedative, stomachic, cholagogue, and sudorific, and are used for migraines, to relieve nervous anxiety, digestion disorders, cramps, as a disinfectant, and for hypoglycemia.
  Leaves are used as an insect repellent. The plant is still used internally for headaches, nervous disorders and insomnia. It is a cough suppressant and used for flatulence.
- **Other uses**: The main use of the oil is in the perfume industry and in cosmetics, cream, soap and other products. It is used for fragrance and in sachets, bath waters, and potpourri. It is also used in herb pillows, crafts, vinegars and jellies. The plant is a bee herb. The essential oil is used as an arrestant and repellent for neonate larvae of the codling moth. The flowers are used in water for washing clothes for its fragrance and as an insect repellent in stored clothes; the plant is also an ornamental in gardens.
- **Caution**: The oil is a causal of secondary pregnancy and postpartum depression, as well as indigestion, heartburn, insomnia and stress. High doses must be avoided during pregnancy since it is a uterus stimulant.

- **Arabic name**: Lavender, Lawend, Khuzam
- **Scientific name**: *Lavandula stoechas* L.
- **Common name**: Lavender, Lavendel, Stachaedoes
- **Family name**: Labiatae / Lamiaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Flowers, stems, and flowering stem ends.
- **Chemical constituents**: Volatile oil of borneol, cineol, geraniol, linalool, limonene, linalyl acetate, linalyl butrate, pinene and tannin.
- **Pharmacological action**: The plant is a source of aroma, and is used for asthma, colds, coughs, stomach ailments, rheumatism, bacterial and viral conditions, retroviruses such as herpes, streptococcal and staphylococcus infections, brain and nervous system conditions, fainting, invigorating a tired brain, mental depression, migraine headaches, nervous anxiety, nervous tension, stress, tension headaches and gastrointestinal conditions. It is also used for colic, flatulence, as a gentle and soothing tonic for the digestive system, nausea, putrefactive bacteria in the intestines, stomach problems and vomiting. It is useful for female conditions, the expulsion of afterbirth, inducing menstruation, respiratory tract conditions, coughs, debility, exhaustion and dizziness.

  Externally, lavender water is used for acne, reducing puffiness, normalizing the sebaceous glands, repelling insects, and as a douche in leucorrhoea. The oil is used for burns, corneal ulcers, cuts, disinfecting wounds, headache, and toothache, and as a compressed oil it relieves intestinal gas, neuralgic pains, rheumatism, sore joints, sprains, and stimulates paralyzed limbs.

  In folk medicine, lavender oil is one of the purest and finest essential oils used to give a soothing massage. It offers plentiful benefits to the skin, and is known as an excellent tonic for the nerves and helps in treating migraines and headaches. It has anti-stress properties and helps in promoting sleep, reducing muscular aches

and backaches and is useful for hair treatment as it removes hair lice, and is spasmolytic and antiseptic, especially for external wounds and injuries. Flowers are used in baths for the skin and for relaxation.

- **Other uses**: It is an aromatic ornamental plant in gardens, and used as a border hedge.
- **Caution**: The plant is a causal of secondary pregnancy and postpartum depression as well as indigestion, heartburn, insomnia and stress. High doses must be avoided during pregnancy since it is a uterus stimulant.

- **Arabic name**: Henna, Hena'a
- **Scientific name**: *Lawsonia inermis* L.
- **Common name**: Henna, Mignonette Tree, Camphire
- **Family name**: Lythraceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Powdered leaves, seeds, bark, flowers, the whole plant, terminals of long branches.
- **Chemical constituents**: Glycosides, mainly lawsone and mannate, from the fixed dyes. Coumarin, quinones, flavonoids, triterpenoids, saponin, dihydroxysterol, naphthoquinone, tannins, phenolic glucosides, D-mannitol, pentacyclic triterpenes, luteolin, luteolin-7-O-glucoside, acacetin-7-O-glucoside, glucoside of □-sitosterol, laxanthoneI, laxanthone II, lawsone, flavone glycosides, xanthones, gallic acid, 2-hydroxy-1:4 naphthaquinone, glucose, mannitol, fats, resin, mucilage and traces of an alkaloid, henna tannic acid, an olive oil green resin, colours, fragrance consist mainly of α-and β-ionones, and a nitrogenous compound. Seeds contain proteins (5.0%), carbohydrates (33.62%), fibres (33.5%), and fatty oils (10-11%) composed of behenic, arachidic, stearic, palmitic, oleic and linoleic acids. The unsaponified matter contains waxes and colouring matter. The root has a red colouring matter.
- **Pharmacological action**: Plant leaf powder is a colouring agent for hair, skin and nails. The plant is used for dermatology, leprosy and leucoderma. The root extract is a vanishing agent. In folk medicine, it is used for fungal infections and enhances wound healing. The root is useful for burning sensations and leprosy. Henna powder is used as an antifungal, anti-inflammatory, hypotensive, analgesic, antipyretic, antiseptic, antioxidant, antimicrobial, and emetic, as well as for immunomodulatory burns. It is also used for hair care, headaches, skin diseases, scabies, seborrheic dermatitis, stomach pains, jaundice, leprosy, and in cosmetics. Seeds are anti-dysentery, the bark is used for jaundice and leaves are used for hair dyes, glaucoma, boils, burns, wounds, ulcers, coughs, and bronchitis, as a prophylactic against skin diseases, and its paste or decoction is used against bruises. A bark decoction is also used against sore throats and dysentery. Henna flowers cure headaches and are refrigerants, diuretics, febrifuges, and local anaesthetics, and are used for dandruff, fever, skin rash, mouth ulcers, immunomodulatory effects, and are hepatoprotective, antioxidant, antibacterial, antifungal, antiviral, anti-trypanosomal, anti-parasitic, molluscicidal, tuberculostatic, anti-fertility, analgesic, cytotoxic, anti-suckling, abortifacient, for their memory and behavioural effectiveness,

and as a nematicidal, anticoagulant and wound healer. Henna oil is used for neuralgia, paralysis, and induces nerve flexibility. It is useful for mouth ulcers and uterus ailments. It stimulates hair growth, is a hair tonic, and cures dry hair and worn out hair. It is also useful for boils on legs, feet and the whole body. It dissolves tumours and alleviates arthritis ailments. Extract overcomes jaundice and dissolves stones. It is diuretic and cures liver, spleen and chronic skin diseases. It relaxes muscles and is used for epilepsy and for wound disinfection. It also stops the growth of some cancers such as sarcoma, stops internal bleeding, cures spleen congestion, lowers blood pressure, stimulates the heart and is a heart tonic, cures vein constrictions and benefits colon inflammation. The oil is used in the perfume industry.

Isoplumbagin isolated from the bark exhibits cytotoxic activity. At concentrations of 10-5-10-8 M, the compound produced LC50-level responses against a majority of melanoma and colon cancer cell lines as well as against several of the non-small cell lungs, colon, and renal cell lines.

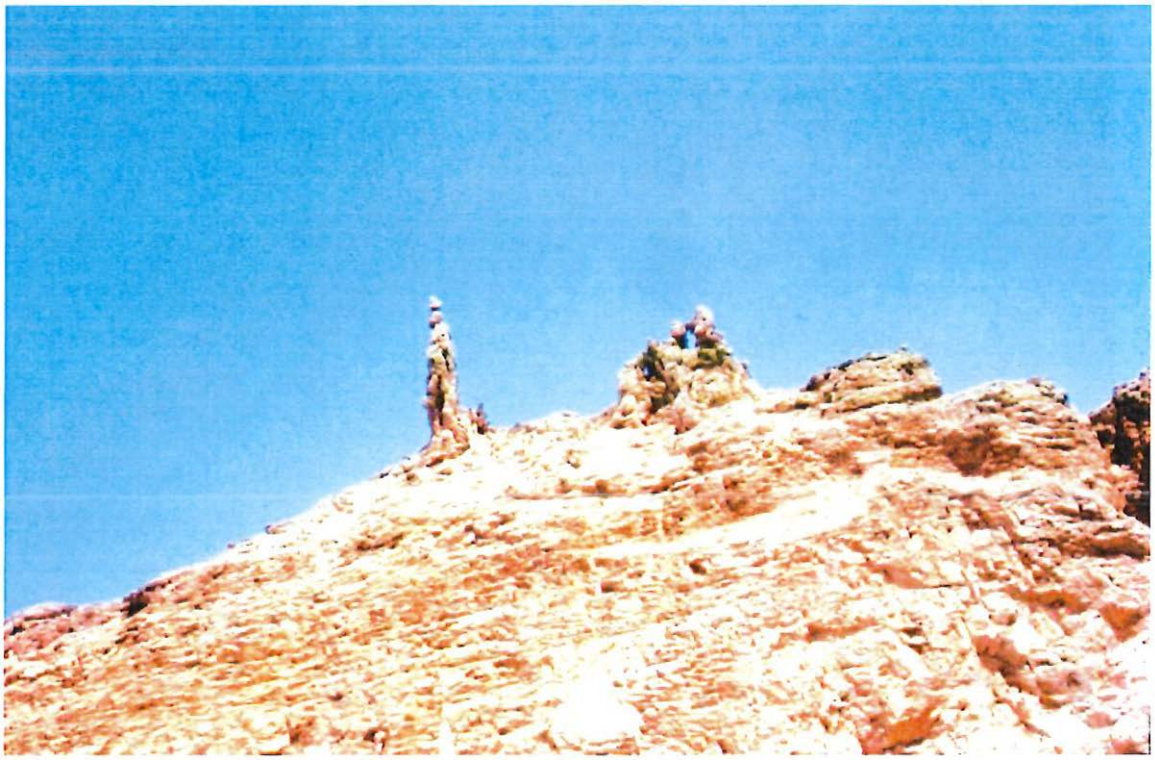
In folk medicine, the leaves are astringent, used for wounds and burns, and their solution is used in eye washing and rheumatism. Henna oil is widely used for dry and damaged hair and helps reduce headaches. A regular use of henna oil strengthens the hair and reduces hair loss, has sedative properties and helps in reducing blood pressure. The oil is widely used as a remedy for skin diseases, and its medicinal and calming properties make it very useful in aromatherapy.

- **Other uses**: Henna natural products are used for hair dyes. Leaves are a potential source for the inhibition of corrosion of aluminium and steel in wet environments. Henna leaves are used for dyeing textiles, and the flower is extensively used as a dye in the silk and wool industries. Henna repels clothes moths and provides a fragrant odour.
- **Caution**: Henna is for external use only, and induces haemolysis among glucose-6-phosphate dehydrogenase deficient newborns. The infertility produced by the powdered leaves of *Lawsonia inermis* appears to be permanent in treated rats. The dried leaves contain 1-2% lawsone (2-hydroxy-1, 4-naphthoquinone).

Fruiting plant and flowering branches

Seeds

- **Arabic name**: Addas
- **Scientific name**: *Lens esculenta* Moench.
- **Common name**: Lentil
- **Family name**: Leguminosae / Fabaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Seeds
- **Chemical constituents:** Protein, iron and other mineral elements, sugars, lipids, starch and vitamin B.
- **Pharmacological action**: Lentils are one of the main foods for humans since it contains protein, although it is lower than that in animals. It relieves temperature and is an antipyretic. Lentil flour with honey is useful for kidney diseases. Seed peel removes constipation and is diuretic. It is recommended for hard workers, sports teams, and for those suffering from dyspepsia. It is prescribed for liver patients and recommended for neural debilities and anaemia. A seed decoction is diaphoretic, diuretic and a stomach tonic. It cures coughs, chest ailments and dropsy. A seed plaster enhances tumours' maturation.
- **Other uses**: The plant is a legume food field crop, and can be consumed as flour, a soup or in salads.
- **Caution**: Lentils may cause fermentations that can be avoided by adding *Myristica* when cooking. It is not allowed for obese people, those with weak intestines, or for liver, kidney, gallbladder and stomach pest patients.



On the way to the Dead Sea

- **Arabic name**: Rashad, Rashad Mazroo'i
- **Scientific name**: *Lepedium sativum* L.
- **Common name**: Garden Cress, Cress
- **Family name:** Cruciferae / Brassicaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Seeds, leaves, roots, and the whole plant.
- **Chemical constituents**: Cress contains mineral elements including iron, phosphorus, sulfur, manganese, iodide, calcium, arsenic, potassium, and vitamins A, B, PP, C and E, as well as carotenoids, volatile oil and glucoside. The plant is rich in iodine that makes it easily digestible. Recent studies have shown that it contains an antibiotic element.
- **Pharmacological action**: Cress is important for the body's biological activity, and its dosages may be used to stimulate sexuality since the plant contains tocopherol resembling vitamin E. It cures stomach ailments and asthma, cleans the lungs, and induces the menstrual period. It is a hair tonic, aphrodisiac, laxative, carminative, anthelmintic and colic. It cures sores, hepatitis, phlegm and contains antibiotics.
  Cress is a digestive, sedative, galactagogue, antiscorbutic, aperients, diuretic, stimulant, tonic, depurative, vermifuge and antihistamine. It is also used for asthma, bone care, calefacient, colds, diarrhoea, headaches, labour pains, and impotency.
  It has been used against insect bites and as an insect repellent. The seeds are used as an aphrodisiac and anti-cancer. It is appetitic, dissipates colic and repels tapeworms and other intestinal worms. It eliminates viscous humours, and is useful for renal "cooling". Seeds are also used in treatments for dysentery, leprosy, skin and eye diseases, leucorrhoea, scurvy, dyspepsia, and seminal weakness. They are bitter, abortifacient, thermogenic, emmenagogue and ophthalmic. The seeds are also a galactagogue, used as a poultice for pains and as an aperient, as well as against backache, bronchitis, colic, coughs, cramps, and measles.
  The root is acrid and bitter, and is used for tenesmus and secondary syphilis. The leaf is diuretic, and has an antibacterial action. It is recommended for hepatopathy and scurvy. The plant is administered in cases of expectoration and bleeding piles.
  In folk medicine, the oil is used as a general tonic; it is useful in acute consumption, and regulates diabetes, increases sexpartite in males, strengthens hair follicles, prevents premature baldness and pliability, soothes

gum disease conditions, rheumatic pains and bums, extracts the poisons and toxins from the body and treats gout.

- **Other uses**: The seeds' oil is edible and young leaves are used in salads. Roots, seeds and leaves have been used as a spicy condiment. The plant is added to meat and fish and is a general tonic. It is also used as a dye, and is an aromatic and slightly pungent plant that liberates vapours.
- **Caution**: Excessive use of cress is not recommended, either for long periods or in increased doses, although it contains benzyl-isothiocyanate which inhibits cancer tumours in animals and humans. It inhibits bacteria and fungus, but if used in large amounts it causes thyroid gland diseases. Therefore, this disease is more common among women, probably because they use the plant more than men and maybe in large doses. It is advised not to be taken during pregnancy.

The plant at seeding stage in the field

Fruiting plant

- **Arabic name**: Ligustrum, Janbat Alrbat, Tamir Henna
- **Scientific name**: *Ligustrum ovalifolium* Hassk.
- **Common name**: California Privet, Oval-leaved Privet, Garden Privet.
- **Family name**: Oleaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Leaves, stem bark, and fruits.
- **Chemical constituents**: Triterpenoides and poisonous glycosides.
- **Pharmacological action**: It is astringent, tonic, a stimulant of the immune system, diuretic, a wound healer, digestive, and anti-diarrhoeal. Its bark infusion, when used as a gargle, cures stomatitis.
- **Other uses**: It is a hedge plant in gardens and a plant used for shade on streets.
- **Caution**: All plant parts are poisonous because of its strychnine content. The plant causes intestinal agitations, ailments, vomiting, and diarrhoea in horses and cows. Fruits contain saponins and polyglycosides that harm animals such as lignin glycoside, syringopicrin, syringin, secoiridoid, ligustron and ligustrin, which are all also toxic to small kids. Leaves and fruits are regarded as toxic and cause agitations.

- **Arabic name**: Hashishit Al-Rassas, Aryal, Aryal Thweini
- **Scientific name**: *Limonium sinuatum* (L.) P. Mill
- **Common name**: Statice, Sea Lavender, Notch Leaf Marsh, Rosemary, Notch-Leaf Statice, Winged Statice, Wavy-Leaf Sea Lavender
- **Family name**: Plumbaginaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: Roots and flowers.
- **Chemical constituents**: Tannin, tannic acid, some alkaloids, essential oil, resin, albumin, caoutchouc, colouring material, woody fibres, and many mineral salts.
- **Pharmacological action**: The plant is a powerful astringent, and is used for acute diarrhoea, as a tonic, to reduce mucus tissue inflammation, and to cure indigestion, pulmonary haemorrhages and catarrhal disorders. A flower decoction used as a gargle is useful for mouth and throat ulcers, pulmonary haemorrhages, chronic laryngitis and some eye infections. Roots are used in folk medicine for diarrhoea and dysentery. Externally, the plant is used as a bath for cancers, sores and a gargle liquid. Root powder may be injected in cases of chronic gonorrhoea and gleet. Flowers are antioxidant and have been historically used as a tea for the prevention of ageing. The antioxidant obtained from flowers may be used in food diets or as a food additive.
- **Other uses**: It provides excellent cut flowers, either fresh or dry.
- **Caution**: The plant causes asthma and inflammation of the nasal mucus membrane, and is not for use by pregnant women.

- **Arabic name**: Kittan
- **Scientific name**: *Linum usitatissimum* L.
- **Common name**: Flax, Linseed
- **Family name**: Linaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Seeds
- **Chemical constituents:** Fixed oil (30-48%) contains a high percentage of omega useful for lowering cholesterol, and glycerides of different acids including linolenic, oleic and fatty acids. It also contains carbohydrates, dietary fibre, fat, protein, thiamine (vit. B_1), riboflavin (vit. B_2), niacin (vit. B_3), pantothenic acid (vit. B_5), omega-3 fatty polyunsaturated fatty acids, vitamin B_6, foliate (vit. B_9), vitamin C, calcium, iron, magnesium, phosphorus, potassium and zinc, polysaccharide, mucilage, phenylpropanoid glycosides, lignans, lipids and pectin. In addition, the plant contains proteins 18-33%, sugars (12-36%), glucoside linamarin (1.5%), lignans, fibres and omega 3. Seeds contain anti-cancers lignans, 97% fibres and omega, mucilage, polysaccharides, phenylpropanoid glycosides, lipids, microelements and vitamins.
- **Pharmacological action**: The plant is a demulcent, hormone regulator, laxative, anti-inflammatory, anti-tussive, anodyne, resolvent, and provides calcium to the body. It is used for chronic headaches, reforms hair, lessens joint ailments, gout, and neural and rheumatism pains. An infusion of seeds is used for colds and the respiratory system, and is also useful for the stomach and helps urination. Seeds are diuretic and used for gonorrhoea, coughs, tuberculosis, arthritis, cutaneous diseases, and chronic constipation, and also as an anti-cholesterolemic. They can be included as part of a diet, may be of benefit against breast and prostate cancers, reduce the risk of colon and prostate cancers, control hypertension, and may lessen the severity of diabetes. Seeds also improve digestion, fight tumour formation, promote bone health, and enhance cardiovascular health. Externally, they are used to heal septic wounds, skin rashes and solid ulcers. They are analgesic, and are used for arthritis, bronchitis, dermatitis, urinary disorders, venereal diseases and wounds. Hot seed poultices are used for boils, pneumonia, burns and eczema. The oil is used for rheumatic pain and constipation, and especially for haemorrhoids. It is rich in fat and is a hair tonic, and cures mucus arthritis, dry cough pain, intestinal ulcers, colic resulting from bladder and kidney stones, and urinary system and prostate ailments.

In folk medicine, flax is a good source of dietary fibre; the seed oil contains omega-3 fatty acids which can be beneficial for preventing heart disease and arrhythmia, and also helps in reducing inflammation and reduces chances of atherosclerosis.

- **Other uses**: Different plant parts are used in the fabric, ink, paper and hunting net industries. Flax fibres are woven into linen cloth. The seed is refined to make linseed oil and is used by painters. The cake remaining after oil extraction is used in cattle feed. Golden flax is a delicious culinary variety with a high alpha-omega oil content. The oil is used in soap and hair fixing. The plant can be used as an ornamental in gardens.
- **Caution**: Excessive seed consumption without liquid can result in intestinal blockages. Consuming large amounts of flax seeds may impair the effectiveness of certain oral medications due to its fibre content, and may have adverse effects due to its content of neurotoxic cyanogen glycosides and immunosuppressive cyclic nonapeptides. Immature seeds should never be used since they contain toxic cyanogenic glycosides. The intake of 10g seeds may enhance pregnancy, especially when impotence is caused by menstrual period problems and ovary weakness. This is due to the lignin seed content, provided that the daily dose does not exceed the indicated amount, since lignin has an effect similar to the estrogen hormone in the body.
  Patients suffering from irritable bowel syndrome can strongly react to flax. Seeds and oil should be stored in good conditions, as otherwise the saturated oil is exposed to oxidation. High doses of flax seeds can have an adverse effect on the hormonal balance of the body. Eating flax plants, especially in large amounts, is expected to affect major body organs such as the liver, heart and kidneys. Dried ripe seed oil (30-45% of the seed) contains cyanogenic glycosides (diglucosides linustatin and neolinustatin 2.6 resp. 3.5 mg/kg) and traces of the monoglucoside linamarin. The content of HCN in the seed varied from 217-541 mg/kg in German samples of seeds. Others have reported variations in seeds' HCN content from 140-370 mg/kg. The main cyanogenic glycosides are the diglucosides linustatin and neolinustatin. The monoglucoside linamarin is sometimes found in low quantities or trace amounts. Lignan (pinoresinol diglucoside) acts as a phytoestrogen.

Seeding plants

- **Arabic name**: Yassmin Iraqi, Assaleh, Ubhar, Assaleh Yabaniya, Assaleh Aratleh
- **Scientific name**: *Lonicera japonica* Thunb.
- **Common name**: Japanese Honeysuckle, Honeysuckle
- **Family name**: Caprifoliaceae
- **Growth habit**: Climber Shrub
- **Life cycle**: Perennial
- **Part/s used**: Flowers, fruits, stem, and leaves.
- **Chemical constituents**: Flavonoids, phenolic acids, oleanolic acid, luteolin, secoiridoid glucoside, chlorogenic acid, iridoid glucosides, pentacyclic triterpenoid acid, □-sitosterol, 10-nonacosanol and chrysin 7-O-□-glucoside, volatile oils, chlorogenic, palmitic and linoleic acids are the highest principal constituents, as well as linalool, ethyl palmitate, tannins such as caffeoylquinates, polyphenolic and loganin. In addition the plant contains potassium, iron, and calcium.
- **Pharmacological action**: The plant is an anti-inflammatory. Flavonoids lower plasma triglyceride, total cholesterol and LDL-C, and increase HDL-C. It is included in anti-ageing cosmetics, and is cytotoxic and antimicrobial. Its gum is used for the prevention of cavities, and is an anti-infective, antipyretic, and analgesic agent for treating eye diseases; it also dispels heat and is a detoxicant for carbuncles, fevers, influenza and ulcers.

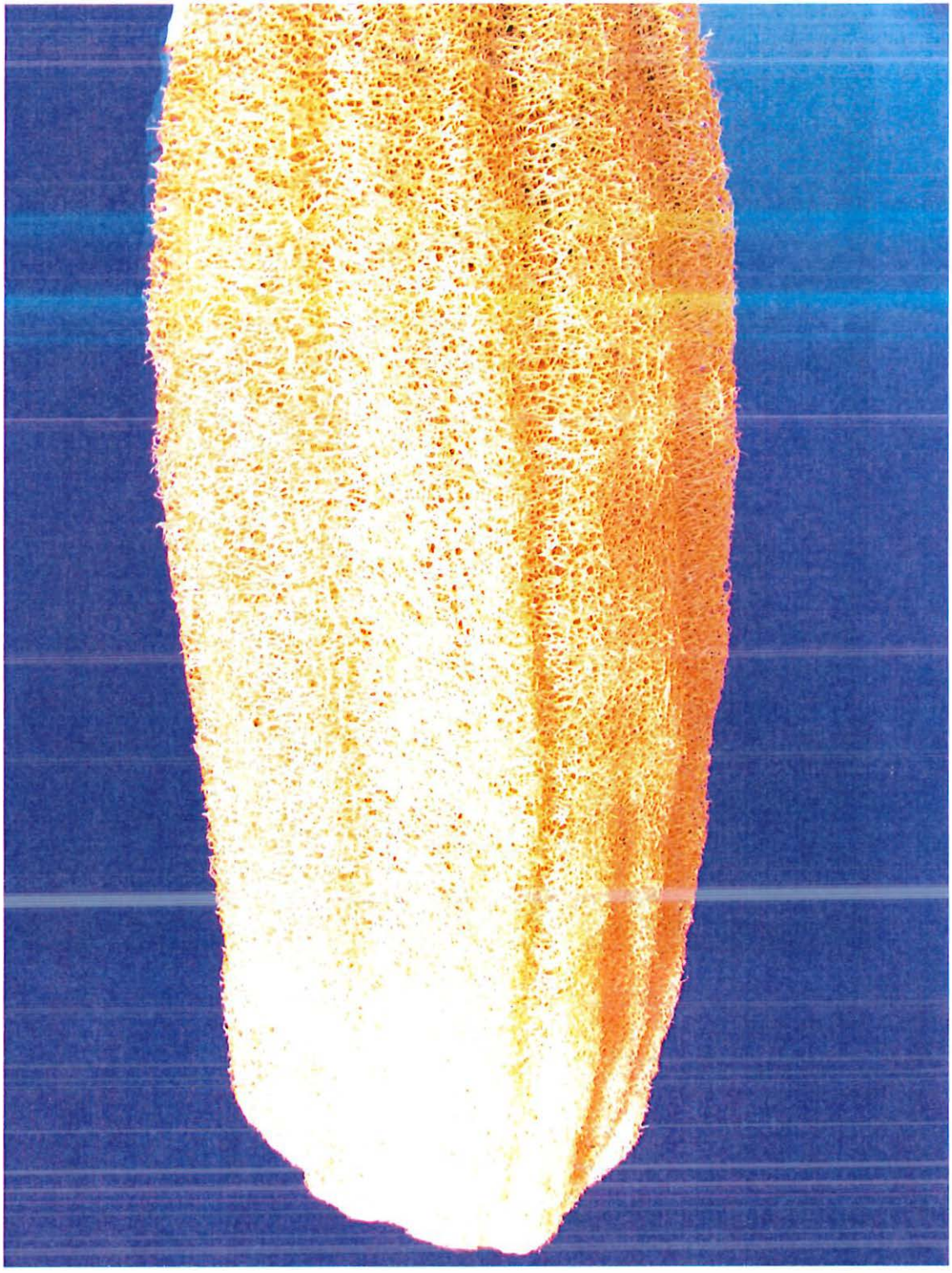
  Traditionally, it is used for fevers, headaches, coughs, thirst, sore throats and abdominal pains. The stems and flower buds are alterative, antibacterial, antispasmodic, depurative, diuretic and febrifuge. The plant reduces blood pressure. Stems are internally used for acute rheumatoid arthritis, anaesthesia and hepatitis. An infusion of stems and flowers is used for upper respiratory tract infections (including pneumonia) and dysentery. A flower buds infusion is used against syphilitic skin diseases, tumours, bacterial dysentery, colds and enteritis. Flower extracts lower cholesterol levels and have antibacterial and antiviral effects and are used against tuberculosis. Externally, flowers are applied as a wash for skin inflammations, infectious rashes and sores.

  The plant is toxic, but an infusion of the bark is used as an emetic for food poisoning. The bark is also used for its perspirant qualities, and berries are toxic, causing somnolence and fatigue.
- **Other uses**: The parboiled leaves can be used as a vegetable, with some caution; flowers are sucked for their sweet nectar, and can be used as a vegetable or made into syrup and puddings. A tea is prepared from the leaves, buds and flowers.

❖ **Caution**: Toxicity results from parts of this plant when internally taken in considerable doses, causing intestinal ailments, chronic diarrhoea (sometimes with blood), pale face, numbness, muscle spasms, photosensitivity, pupil dilation, excessive perspiration and an increase in heart rate. Flower buds contain pyridinium alkaloid-coupled secoiridoids and triterpenoid saponins. Only the flowers and stems are authorized for use in foodstuffs. If a tincture is to be used then the decoction method should be followed to lower the alcohol percentage.

Plants of different flower colours

- **Arabic name**: Leef, Loof Masri, Loof Ostowani
- **Scientific name**: *Luffa cylindrical* (L.) M. Roem
- **Common name**: Sponge Gourd, Vegetable Sponge, Gourd Towel
- **Family name**: Cucurbitaceae
- **Growth habit**: Climber herb
- **Life cycle**: Annual
- **Part/s used**: Fruit
- **Chemical constituents:** Zylan, xylose, and galactan.
- **Pharmacological action**: The plant is used for dermatitis, skin diseases, and inappetence; it is cathartic, diuretic, and emetic, and is used in a skincare lotion containing 20% weight of *Luffa cylindrica* juice. It is also used for curing muscle, bowel, and chest infections associated with fever, nasal mucus retention and breast swelling.
- **Other uses**: Dried fruit pulp is used for body cleansing.
- **Caution**: No reports.

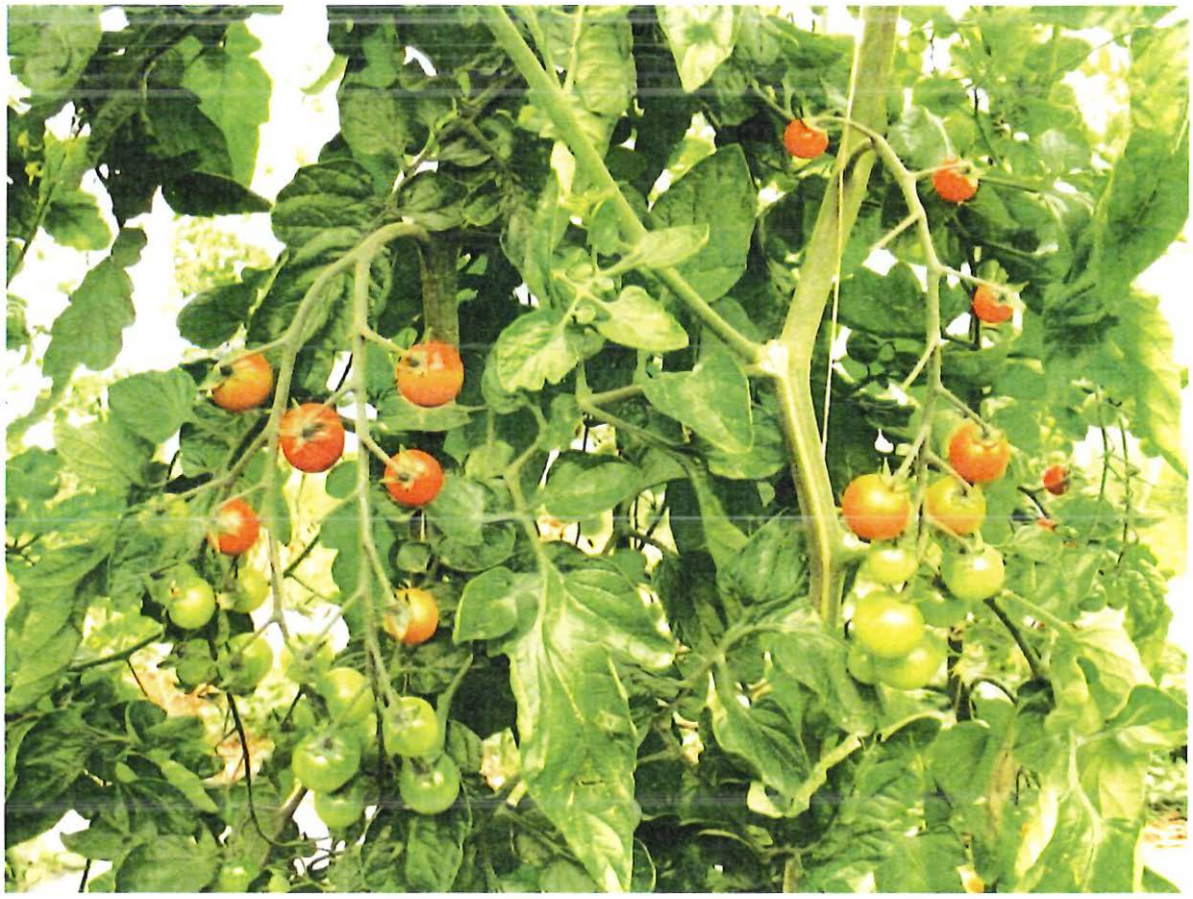


Fruit pulp tissues

- **Arabic name**: Tormus
- **Scientific name**: *Lupinus albus* L.
- **Common name:** White Lupine, Lupin
- **Family name**: Leguminosae / Fabaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Seeds

Seeds

- **Chemical constituents**: Isoflavonoids, seeds contain 32-40% protein, 8-12% oil, cholesterol, lupinin alkaloids, total dietary nitrogen (TDN) (75–80%), are rich in fibre, and do not contain trypsin inhibitors. Mineral elements are mainly calcium, phosphorus, and anezonophosphate.
- **Pharmacological action**: Seeds are diuretic, emmenagogue, hypoglycaemic, vermifuge, menses, expel afterbirth such as secundines, stimulate kidneys, protect against intestinal cancer, bring on the menstrual period and expel intestinal worms. They are digestive, a nerve tonic, excitant and act against constipation. Externally, the plant is used against deformities of the skin, scabby ulcers, scald beads and other cutaneous distempers. In folk medicine, it is used to treat diabetes and skin ulcerations. The intake of dried seeds or their powder helps cure diabetes, and water-soaked seeds are diuretic, dissolve kidney stones, and are anthelmintic and cardiotonic. The seed flour water is also used as the lotion removes acne.
  In folk medicine, seed oil kills worms, cures scabies and sores, protects the skin, and is used against diseases such as psoriasis, eczema, rashes, and Nile fever.
- **Other uses:** The fibre-rich lupine flour is a source of food with a high potassium, calcium, carotenes, and protein content. It is used to enrich spaghetti, cake mixtures, grains and other baked goods. It is a good source of macro- and micro-nutrients, protein, fat, carbohydrates, minerals, and vitamins. Seeds can make a valuable addition to animal feed, which can be fed to animals directly without heat treatment.
- **Caution**: The seeds of some species are poisonous. There is a high risk of serious acute asthma due to the lupine flour, which is associated with painful allergies. The ingestions of these plants, especially in large amounts, may affect major body organs such as the liver, heart and kidneys. When animals graze lupine stubble, lupinosis disease can develop, caused by a mycotoxin. Symptoms include anorexia and jaundice. Total alkaloids in seeds are < 100-30, 700 mg/kg dry weight. The main constituent is lupanine (57-86% of the total alkaloids). No anagyrine is found. Case reports indicate that acute intoxications of adults caused by lupin alkaloids may occur after an intake of 25-46 mg lupin alkaloids kg/bw and case reports concerning small children indicate that an intake of 11-25 mg/kg bw may be lethal.



- **Arabic name**: Bandorah
- **Scientific name**: *Lycopersicon esculentum* Miller
- **Common name**: Tomato
- **Family name**: Solanaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial but grown annually
- **Part/s used**: Fruits and leaves.
- **Chemical constituents**: Moisture, ash, fibre, protein, glucose, fructose and solanine in immature green fruit. It also contains lycopene and vitamins. Fruits have sufficient and well balanced nutrition containing minerals like potassium, zinc, magnesium and many others, and are rich in vitamins A, B, C and E.
- **Pharmacological action**: Tomatoes are used for bleeding gum skin and nose bleeding, and help prevent the development of many types of cancers due to the high concentrations of vitamin A and C, protein, riboflavin, fibre, sodium, potassium, and iron. Its high vitamin content helps minimize the possibility of prostate and breast cancer. Tomato fruit also contains lycopene (red pigment), an excellent antioxidant that has attracted interest recently because of its activity against radicals that cause ageing or muscular degradation, cancer and heart diseases. Tomato is emollient, appetitic, anti-anaemic, diuretic, sedative, a liver and pancreas tonic, a light laxative, anti-scorbutic, detoxicant, and dissolves uric acid. Fruit juice reduces stomach acidity and is recommended for anaemia. A leaf decoction dissolves stones and is a diuretic. Leaves are used in a poultice for burns, furuncles and haemorrhoids. Externally, the plant is used for acne and maceration with leaves cures insect stings. Tomato is prescribed for arthritis, intestinal mouldiness and constipation.
- **Other uses**: The plant is a common vegetable crop, and its fruits are used in different food forms. Tomato is used in various processed foods such as sauces and ketchup, pastes, salads, purees, and drinks. Bunched tomato leaves repel mosquitoes and wasps, and fruit juice removes ink from clothes.
- **Caution**: Only immature green fruits may cause slight toxicity in large doses because of their solanine content. Tomatoes should be avoided by persons with weak stomachs, high acidity levels, and intestinal and colon inflammations, while patients with a liver disease or colon inflammation should peel fruits before ingesting them.

- **Arabic name**: Toffah
- **Scientific name**: *Malus domestica* L.
- **Common name**: Apple
- **Family name**: Rosaceae
- **Growth habit**: Small tree
- **Life cycle**: Perennial
- **Part/s used**: Fruits
- **Chemical constituents**: Phloretin compound. Apple is a rich source of carbohydrates, proteins, minerals like iron and potassium and others. It contains vitamin C, pectins and beta carotene. Edible oil is present in seeds.
- **Pharmacological action**: Apples are good for normalizing the intestines, and for the treatment of anaemia. Apples are believed to reduce the incidence of dental caries, help control obesity and supply extra energy for heavy exercise.

  The fruit is astringent and laxative. The bark (mainly root bark) is anthelmintic, refrigerant and soporific. Its infusion treats intermittent, remittent and bilious fevers. The leaves contain up to 2.4% phloretin (an antibacterial agent). Ripe fruit is easily digested and apple juice is anti-acidic. The apple is an excellent dentifrice. Pectin has been mentioned to protect the body against radiation.
- **Other uses**: It is a fruit tree and may be considered as a tree on streets in certain places and for certain varieties. Fruits are pressed and the juice is used as a drink, or may be cooked and made into different forms of sweets and jams. The fruit is a source of pectin. Pectin is a thickener in jams and as a culture medium in laboratories. The seed oil has been used as an illuminant. The wood is hard, compact, and fine-grained. It is used for turnery, tool handles, canes and other purposes. It makes an excellent fuel.
- **Caution**: Apple seeds contain a small percentage of hydrogen cyanide and so should not be consumed in large quantities. Hydrogen cyanide stimulates respiration at low doses and improves digestion. It is claimed to be of benefit in cancer treatment. When consumed in high doses, it can cause respiratory failure and even death.

Another cultivar

- **Arabic name**: Babounej
- **Scientific name**: *Matricaria chamomilla* L.
- **Common name**: German Chamomile, Wild Chamomile, Hungarian Chamomile, Pineapple Weed
- **Family name**: Compositae / Asteraceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: The whole herb, flowers, inflorescence and sometimes vegetative parts.
- **Chemical constituents**: Essential oil (1%) of dried flowers, which is dense, blue in colour and frozen with cooling, and smells like matricarin. The oil contains the glucoside known as anthemic acid, anthamedine material, tannin, matricarin and an azulin derivative. It also includes apiin, flavones and mucilage, in addition to bisabolol, prochamazulene that transforms into chamazulene, and flavonoids such as apiginin and luteolin.
- **Pharmacological action**: The volatile oil is anti-inflammatory, carminative, stomachic, laxative, diaphoretic, analgesic, antiseptic for respiratory and digestive systems, antispasmodic, stimulant, tonic and sedative. The oil is used for colic, dyspepsia, rheumatism, burns, eczema, indigestion and headaches. Flowers are used for earache and their infusion is useful for insomnia. The oil's blue colour is from the azulene. Chamomile is used in massage oil and herbal mixtures, and as a muscle relaxant, soothing agent, skin conditioner and aphrodisiac. It is also used in the cosmetic industry.

  The plant is antipyretic, appetitic, a blood cycle stimulant, and useful for chronic bronchitis, whooping cough and asthma. It is carminative, a tranquillizer, cholagogue, anthelmintic and emmenagogue, and is beneficial for gout, scabies, arthritis, rheumatism, burns, eczema, and headaches. Chamomile cures eye inflammations, diarrhoea, stomach aches, and uterus constrictions, and is a memory and brain stimulant.

  In folk medicine, the plant is used as a general antiseptic for sore throats, eyes and teeth. An antispasmodic, it cures intestinal colic and is a febrifuge. Oil is used in facial steams to reduce and clean the pores of the skin. A thin layer of chamomile oil is applied on the skin or as a massage and its vapour is used for face cleanliness. It is also used in the treatment of the gastrointestinal canal and for flatulence, as a blood tonic, to activate blood circulation, to stimulate appetite and works against hypothermia. The oil relieves or prevents spasms and eases pain when applied during menstrual cramps or tension headaches. It smells fresh fruity and therefore is well-liked by most people as a good massage oil which has peaceful and relaxing properties. It serves as an excellent means to help people forget their problems and become stress-free. It is also used in cases of fever as it acts on releasing sweat, stressed nerves and insomnia. The oil treats rheumatic and nerve pains as well as vertebra pains. It nourishes and softens the skin, removes freckles, makes hair shine and treats itches. It dissolves pebbles (stones) and activates kidneys. The oil also helps to avoid infections developing due to its antiseptic properties, and helps to relieve pain in muscles and joints, sinuses, toothache

and bone injuries. It is a famous ingredient for the toning of skin, muscles and internal organs. Blue chamomile is the most commonly used oil in aromatherapy, which can be attributed to its tranquillizing and relaxing effects.

- **Other uses**: It has a toning aroma, and is used as a tea or face lotion, and as azolines in face creams. The plant is a wild flower.
- **Caution**: The oil exhibits a blue colour since it oxidizes with exposure to air upon which it turns toxic, and therefore its decoction must be used the same day and should never be stored for later use. The oil is likely to cause skin irritation, and therefore pregnant women must avoid using it.

- **Arabic name:** Sabahbah, Neem, Zanzalikht
- **Scientific name**: *Melia* azedarach L.
- **Common name**: Chinaberry, Bead Tree, Azedarach
- **Family name**: Meliaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Fruits, oil, and leaves.
- **Chemical constituents:** Margozine alkaloid, margostic acid in the bark, fruits and leaves contain other alkaloids such as tazitene. Seeds contain fixed oil (40-60%) of a bitter substance (margospierine). Stems contain surianol, melanin B, sendanolactone, 3-□-hydroxy-4,4,14□-trimethyl-5-□-preg-8-en-20-one and ohchinin acetate, 12□-hydroxyamoorastatone. Other chemicals in the plant include scopoletin, hydroxycoumarin, limonoids, glycerides eicosane, tingenone and ferulic acid esters.
- **Pharmacological action**: The plant is an anti-periodic, astringent, anthelmintic, antiseptic, emollient, purgative, anti-tumour, tonic and diuretic. It is used for dermatitis, malaria and nausea. Leaves are used for anaemia, eczema, measles, jaundice, bleeding piles, wounds and pimples. The plant has antifungal effects and contains the antiviral meliacarpin. It is used as an extract in a skin whitening composition and is included in compositions for the treatment of prostate gland disease and haemorrhoids. Fruit ethanol extracts have larvicidal effects. It is included in a composition of bactericidal and insecticidal compounds, and aziridine is a component in veterinary liniment preparation.
  Seed extracts cure rheumatism and skin diseases including leprosy and parasites. The oil is useful as a hair tonic, and is anti-periodic, astringent, anthelmintic, and diuretic. All parts of the tree are narcotic.
- **Other uses**: The plant is an anti-feedant and insecticide. It is used in soap for cleaning pets, cooling and removing mould, and is also included in insecticidal and acaricidal compositions. The plant is used as timber, fodder and a tree for shade. The plant's extract is used in the production of toothpaste and soap. A leaves infusion is used for insect control, as an anti-feedant, and as an insecticide. The plant is an ornamental tree on roadsides and in public gardens.
- **Caution**: The bark, flowers, leaves, seeds and fruits are all of possible concern. The plant contains azadirachtin A (a limonoid commonly referred to as azadirachtin) and other tetranotriterpenes (meliatoxins) in the fruits.

Ingesting the plant, especially in large amounts, is expected to cause effects on major body organs such as the liver, heart and kidneys. It is known to cause problems in animals. Fruits are highly toxic to humans and animals because of the tazettine. The plant causes paralysis, breathing difficulties and death by suffocation.

Flowering and fruiting branches

- **Arabic name**: Hasheshat Al-Nahl, Hasheshat Al-Laymon, Teringan
- **Scientific name**: *Melissa officinalis* L.
- **Common name**: Lemon Balm, Sweet Balm, Balm
- **Family name**: Labiatae / Lamiaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: Leaves and flowering heads.
- **Chemical constituents**: Essential yellow oil in leaves contain many active ingredients including citral, linalool, citronellal and geraniol that give a lemon aroma to new leaves. The plant also contains starch, aldehyde, tannins, mucilage, bitter essence, saponins, pinene, resin, eugenol, tannins, terpenes, sosenol acid, bitter compounds, flavones and rosmarinic acid.
- **Pharmacological action**: The plant is carminative, antispasmodic, anxiolytic, diaphoretic, sedative, febrifuge, disinfectant, tranquillizer, digestive and emmenagogue. It has antibacterial, antiviral, and aromatherapy effects. It is used for allergy, anxiety, asthma, vomit, epilepsy, gastritis, muscular pains, rheumatism, insomnia, cramps, earache, hysteria, headache and toothache.

  The oil is useful in curing psychological disorders, especially depression, tension and joints ailments, and is a strong diaphoretic used for fever.

  The aromatic tea prepared from its leaves is calming, analeptic and of a nice smell. It helps to cure nasal congestion. Oil ointments are used for insect stings. The oil, when diluted with almond or olive oil, is used for tension and chest diseases. It stimulates the memory, is galactagogue and used for uterus cleansing after birth.

  Eugenol kills bacteria and calms muscle and tissue narcosis, while the tannins contribute to its antiviral effects and the terpenes add to its soothing influences.

  The extract as a herbal tea is an antiviral against a range of virus infections including mumps, and the essential oil has an antibacterial effect. Lemon balm infusions have been used for depression, and the leaves' powder is rubbed on the skin as a mosquito repellent.

  Lemon balm and its preparations improve the mood and mental performance, including in Alzheimer's patients with mild to moderate symptoms. The extract is a strong antioxidant and anti-thyrotropic. The plant improves plasma levels of catalase, superoxide dismutase, and glutathione peroxidase, and causes a marked reduction in plasma DNA damage, myeloperoxidase and lipid peroxidation.

One traditional use of lemon balm tea was due to the belief it extended age. Ob-X, a mixture of three herbs, *Morus alba, M. officinalis*, and *Artemisia capillaris*, may help regulate obesity. Ob-X reduces body weight gain and visceral adipose tissue mass in genetically obese mice.

- **Other uses**: It is used as a stewing herb for teas, flavouring soups, stew, fish, poultry, vegetables, salads, drinks, meat dishes, garnish and potpourris. It makes a good tea. Caddied leaves make attractive cake decorations. Chopped fresh or dried leaves can be added to fish and chicken dishes and sprinkled over fresh vegetables. They can also be added to summer drinks and fruit salads and make a good substitute for lemon peel in recipes. Melissa oil is used to flavour alcoholic and non-alcoholic beverages, confectionery and processed food products. It is sometimes used as an ingredient in perfumes and in toothpaste, as a furniture polish and is an excellent bee herb.
- **Caution**: Melissa perfume is not for use on the skin in direct sunlight, and should not be used by those on thyroid medications (such as thyroxine) as it is believed that it inhibits the absorption of this medicine.
  Despite extensive traditional medicinal use, Melissa oil was initially prohibited by the International Fragrance Association's (IFRA) 43rd amendment, but this restriction appears to have been revisited and relaxed in the 44th amendment.

Flowering plant

- **Arabic name**: Na'na' Balady, Na'na'
- **Scientific name**: *Mentha viridis* L.
- **Common name**: Mint, Common Spearmint
- **Family name**: Labiatae / Lamiaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: Leaves and flowering terminals.
  The whole herb should be gathered for medicinal use during dry weather and before full flower development. If it is gathered to procure its oil, then this should be done after the flowers' development and before seed ripening.
- **Chemical constituents**: Mint contains menthol, terpene, phellandrene, menthone, and pinene. The essential oils are rich in linalool, linalyl acetate and terpene. Overdot, pulegone, carvone, carvacrol, rosmarinic acid, limonene and cis-carveol are also present.
- **Pharmacological action**: An infusion of aerial parts is widely used in perfumes and food technology. Mint is a powerful stomachic, antiseptic, reduces pain, and removes intestinal colic, especially in infants. It is used as a hot drink to cure flatulence, colic and improve sweets' and food's taste. The oil is an anti-dermatomycotic, diuretic, antiseptic, tonic, stimulant, antispasmodic, and a rubefacient. It is used externally for colds, rheumatic pain and other pains; by rubbing it on the body, it lessens pain and increases blood flow to the affected part.
  A herbal tea made from mint relieves headaches, menstrual cramps, indigestion and rheumatic pains. Leaves are used for abdominal pains, distension, vomiting, constipation, slow hair loss and as a hypotensor. The roots are stomachic, carminative, anti-microbial, antiseptic and disinfectant, and used for giddiness. They also cure stomach pain. Leaf poultices cure breast tumours and are rubbed on the tongue to remove roughness. They are also useful for jaundice. The leaves' extract is a neural system sedative, and controls stomach and digestive system pests, as well as liver, bladder, and intestine problems and their parasites. The inhalation of mint's volatile oils is anti-asthmatic and heals bronchitis, sinusitis, allergy and scabies.
  Mint is prepared in different forms, including in tablets, capsules, drink, and spirits, and all cure intestine disorders.

In folk medicine, the oil makes the atmosphere fresh and cool. It is locally used to relieve pain. Useful as an effective breath freshener, it is popular in aromatherapy and helps with the reduction of pain if applied externally. It is dipped in affected areas using cool water to reduce swelling and pain; it also improves the blood flow of veins, helps with normalizing the metabolism and is a body remedy for reducing symptoms related to digestion. It treats catarrh, colds and coughs, and is a tranquillizer for throat and breast inflammations, cramps and nerve disturbances. It relieves the pain of the menstruation period and kidney colic, and activates stomach as well as gallbladder secretions. In addition, it relieves pain resulting from the blocking of the hepato-pancreatic duct.

- **Other uses**: Green leaves are used in salads, as a tea flavouring and for smoothing ailments. Mint prepared with *Telia anguistifolia* and *Melissa officinalis* (flower mixture), macerated in hot water after a meal, is an antiseptic since it is rich in the alcoholic menthol generated from the mint. The oil is a composition in toothpaste and soap. It is used to fragrance sweets and gum, and is also used in pharmaceutical formulations.
- **Caution**: High doses cause vomiting. It has a harmful influence on the nervous system. The intake of large quantities may cause death. Mint oil should never be given to children without medical supervision. The oil may irritate mucous tissues, and should not be given to children for more than a week without a break. No form of mint is to be given directly to small children.

- **Arabic name**: Sabah Al-Khair, Al-Shab Al-Thareif, Mahkama
- **Scientific name**: *Merabilis jalaba* L.
- **Common name**: Four O'Clock Plant
- **Family name**: Nyctaginaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Leaves
- **Chemical constituents**: Alkaloids, glycosides, phytosterols (B-sitosterol, stigmasterol), carbohydrates, flavonoids, ursolic acid, oleanolic acid, brassicasterol and trigonelline.
- **Pharmacological action**: The plant is useful for skin diseases such as freckles and abscesses, wounds, warts and itches. It is an anti-inflammatory, hypoglycaemic, anti-lipid, anti-histamine, antioxidant, anti-microbial, anti-convulsive, anti-nociceptive and cytotoxic.
- **Other uses**: It is used as an ornamental plant.
- **Caution**: Plant ingestion may cause some minor symptoms such as rashes, vomiting or diarrhoea. Eating small amounts may not cause any symptoms. Exposure to plant juice or sap may produce a skin rash or irritation.

Different flower colours

- **Arabic name**: Toot Shami, Toot Abyad, Firssad
- **Scientific name**: *Morus alba* L.
- **Common name**: White Mulberry, Sycamine, Mulberry
- **Family name**: Moraceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Root bark, leaves, flowers and fruits.
- **Chemical constituents**: Latex and the glycoside quercetin in the plant. Fruits contain organic acids among which are maleic, citric, ascorbic, nicotinic, sucrose, pectin and flavonoids (rutin, adnin). In addition, fruits contain protein, lipids, mineral salts of calcium, iron, copper, cobalt, sulfur, potassium, phosphorus, sodium, manganese, and chlorine, vitamins A, B and C and tannins. Leaves contain flavonoids including rutin at higher percentages than in fruits. The plant contains anthocyanins, artucabin, proteins, fatty materials and sugars. Kuwanon G, albanol A, moracin M, steppogenin-4′-O-β-D-glucoside and mulberroside A in root bark. Prenylated flavonoid substances attract the silkworm larvae to the leaves, such as citral, linalyl acetate, linalool, terpinyl acetate, hexanol, □-sitosterol along with some sterols and a water-soluble substance. Non-protein nitrogen accounts for 22% of the total nitrogen in young leaves and 14% in mature leaves. Amino acids identified in the free form are phenylalanine, leucine, valine, tyrosine, proline, alanine, glutamic acid, glycine, serine, arginine, aspartic acid, cystine, threonine, sarcosine, gamma-amino-butyric acid, pipecolic acid, and 5-hydroxy pipecolic acid. The leaves are a good source of ascorbic acid; they also contain carotene, vitamin B_1, folic acid, folinic acid, vitamin D and phytate phosphorus. Volatiles in leaves are n-butanol, beta/gamma-hexanol, methyl-ethyl acetaldehyde, n-butyraldehyde, isobutyraldehyde, valeraldehyde, hexaldehyde, alpha/beta-hexenal, acetone, methyl-ethyl ketone, methyl-hexyl ketone, butylamine, and acetic, propionic, and isobutyric acids. Leaves also contain calcium malate, succinic, and tartaric acids, xanthophyll, isoquercitrin (quercetin 3-glucoside) and tannins; adenine, chlorine, and trigonelline bases are present in young leaves. The wood contains morin, dihydromorin, dihydrokaempferol, 2,4,4',6-tetra-hydroxybenzophenone, maclurin, and hydroxyresveratrol. The fruit is rich in carotene, vitamins B_1, B_2 and C, glucose, sucrose, tartaric acid and succinic acid. Seeds contain fatty oil (with linoleic, stearic, oleic-, myristic, palmitoleic, and arachidic acids) and protein. In addition there are morusin, flavonol quercetin, polysaccharide and alkaloids in leaves; prenylated flavanone, phenolic anthocyanin, moracin M, steppogenin-4′-O-β-D-glucoside and mulberroside A were isolated from the root bark.

- **Pharmacological action**: It is antiphlogistic, diuretic, expectorant and antioxidant. It helps with reducing cholesterol levels, is a hypoglycaemic, prevents liver cancer, and is a skin tonic. The juice is antiseptic, astringent, cicatrising, helps gastritis and is an insect repellent. The oil is purgative and vermifuge, and is used for burns, respiratory infections, constipation, diarrhoea, peptic ulcers and intestinal worms. Leaves' extract and root bark are used in preventing and treating diabetes mellitus.
  The plant is used for cosmetics, and is anti-ageing, anti-wrinkle, anti-inflammatory, and antimicrobial. The plant is included in a skin whitening composition that has an excellent effect of inhibiting human tyrosinase activity in melanin synthesis and in different formulations.
  Fruits are edible fresh and dry, are a laxative and anti-diabetic, promote sweating, lower blood pressure and are used for weakness, dizziness, jaundice, hay fever, anaemia, urinary incontinence, tinnitus and grey hair. They are used as a colouring and flavouring in other medicines. The leaves have antibacterial, diaphoretic, odontalgic, and ophthalmic properties and are used for colds, influenza, eye infections, and nose bleeds, and are a homeopathic remedy. The bark is hypotensive and contains anti-microbes that cause food poisoning, and albanol A is an effective drug for leukaemia. A tincture of the bark is used to relieve toothache. The root bark chemicals are also hypoglycaemic, anti-tussive, and hypotensive, and are used for asthma, coughs, bronchitis, edema, hypertension and anthelmintic. Mulberroside is used in the treatment of hyperuricemia and gout. The roots' extract showed adaptogenic activity, and a leaf extract helps restore the vascular reactivity of diabetic rats and is an anti-hyperglycaemic, and has antiglycation effects in chronic diabetic rats, suggesting its use as a food supplement for diabetics.
  In folk medicine, fruit juice is a drink for tumours of the fauces, and is antidotal, anti-tussive, anti-vinous, bactericide, diaphoretic, diuretic, emollient, escharotic, fungicide, nervine, refrigerant, restorative, sedative and tonic. Mulberry is a remedy for naphtha, arm ache, asthma, bronchitis, bug bites, cachexia, colds, coughs, debility, dropsy, dyspepsia, edema, epilepsy, fever, headaches, hyperglycaemia, hypertension, inflammation, insomnia, melancholy, menorrhagia, snake bites, sore throats, stomatitis, tumours, vertigo, and wounds.
  Fruits are used locally as a remedy for sore throats, dyspepsia, and melancholia. The roots and bark are anthelmintic. The leaves are diaphoretic and emollient, and can be used as a gargle decoction for pharyngitis, for improvements in elephantiasis (enlargement and thickening of tissues) with leaf extract and for tetanus following oral doses of the sap mixed with sugar. The stems are anti-rheumatic, hypotensive and pectoral.
  Flower and leaf decoctions are used medicinally, fresh fruits are edible since they are depurative, and fruit juice is a remedy for stomach acidity, constipation, rheumatism, liver diseases and psychological asthenia. It is a strong antioxidant. A leaf decoction cures diabetes.
  Mulberry has anti-inflammation, anti-sore, anti-viral, anti-cancer, anti-dysenteric, anti-stomach disorder and anti-scorbutic properties and cures urinary system problems. Its fruits are used as masks for acne, and smooth and disinfect facial epidermal cells. The bark is useful for toothache. Mulberry is an insect repellent and depurative. The plant extracts have antibacterial and fungicidal activity.
- **Other uses**: The plant is used as timber, and the bark fibre is used in weaving. A red-violet to dark purple dye is obtained from the fruit and a yellow-green dye from the leaves. If leaves are cooked with grape and black fig leaves in water then the mixture is used as a hair colouring agent, giving a dark colour. Fruits are eaten raw or cooked, and the ingredients of mulberry wine make a seductive drink. Wild animals feed on its fruits. Leaves are food for silkworms, are sometimes eaten as a vegetable and are useful as fodder. Its wood is used for sporting goods: sapwood for hockey sticks, tennis and badminton rackets and racket presses, and cricket bats, as well as for house building materials, agricultural implements, furniture, and fuelwood. Stem bark fibres are used in the paper industry, and twigs are used for making baskets. Trees are often used as ornamentals, on roadsides or as boundary markers.
- **Caution**: The consumption of excessive amounts of fruits must be avoided since this causes diarrhoea, and if leaves and bark are used in cases of lung weakness or distances then a medical doctor needs to be consulted.

Fruiting tree

- **Arabic name**: Toot Aswad
- **Scientific name**: *Morus nigra* L.
- **Common name**: Black Mulberry
- **Family name**: Moraceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Leaves and fruits.
- **Chemical constituents**: Fruits contain organic acids (mainly maleic, citric, and ascorbic), amino acids, sucrose, pectin, and flavonoids, of which the most important is rutin. Fruits also contain protein, fat materials, calcium, iron, copper, cobalt, sulfur, potassium, phosphorus, manganese, chlorine, vitamins A and C and tannins. In leaves, there are flavonoids, of which the most important is rutin, in addition to protein, fatty materials, sugars and citric acid.
  Phenolics, anthocyanin and mannose-specific lectin were isolated from the bark. Isoquercitrin, anthocyanin, morusin, prenylflavonoid are in the root bark, as well as flavonoids, umbelliferone, scopoletin, friedelin, □-amyrin, hederagenin, and □-sitosterol. In the bark of the branches are phytosterol, ceryl alcohol, stearic, myristic, and linolenic acids, H_3PO_4, glycerol, tannins, phlobaphenes, sugar and lectin.
- **Pharmacological action**: Eating mulberry fruits is very useful for anaemia, and for throat and intestine burning. The plant is a cure for eczema and pneumonia, and is diuretic and antiseptic. It is used for bilharzia, stomach acidity, coughs, measles and whooping cough. It is useful for cancerous skin sores and mouth rashes. Leaves are useful for chest ailments but not for the stomach, and when green are astringent. Mulberry restores the liver, but increases spleen spoilage, reduces thirst and cures sores and burns. The leaf juice is detoxicant, and when the fruit drink is combined with vinegar it is used for itching and skin ruptures. When used with plum leaves they expel internal worms. Fruit juice is a colouring and flavouring agent. Mulberry roots are purgative and vermifuge, show male hormonal activity, are useful for impotence and reduce sugar levels in blood and urine (especially when used with leaves). A composition is used as an auxiliary medicament against diabetes mellitus type 1 and 2 and is antioxidant. The fruit is used in treatments of the mouth, tongue, pharyngitis and dysmenorrhoea, and is antimicrobial (anthocyanin), anti-hyperglycaemic, and tonic. Mulberry is also an antioxidant, a stimulant and antiscorbutic.
- **Other uses**: It is a fruit and ornamental plant sometimes found on streets. Its fruits can be eaten raw and made into juices, jams and fruit salads.
- **Caution**: The consumption of excessive amounts of the plant's fruits should be avoided. Leaves and bark are also to be avoided in cases of weak lungs, otherwise a practitioner needs to be consulted.

- **Arabic name**: Mooz
- **Scientific name**: *Musa paradisiaca* L.
- **Common name**: Banana
- **Family name**: Musaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Fruit, flowers, and leaves.
- **Chemical constituents**: Natural sugars (sucrose, fructose and glucose), starch, tannin and mineral elements including copper, iron, potassium, magnesium, selenium, phosphorus, calcium, nitrogen, and florin. It also includes vitamins A, B, B_1, B_2, B_6, B_{12}, C, D and E, pantothenic acid, fibre, protein, fat (0.98%), acids (0.34%) and ash. Non-digestible fibres, cellulose, hemicellulose, alpha-glucans, pectins and fructooligosaccharide, the flavonoid leucocyanidin, phenolic phytochemicals and tryptophan protein are also present.
- **Pharmacological action**: It promotes healthy digestion, improves the affective state, helps in the retention of water and serves as a good source of potassium, calcium, phosphorus and nitrogen, which build and regenerate tissues in the body, and it is also a rich source of iron and vitamins, especially vitamins C and E. The mature green fruit has conclusively been shown to improve the semen parameters of Wistar rats at a moderate dose, making it a possible remedy for male reproductive dysfunctions in which sperm cells have been adversely impaired. In folk medicine it is used for burns and throat sores. Banana has the potential to lower cholesterol. It is a good source of antioxidants that protect against degenerative diseases such as strokes, cardiovascular problems and cancer. The ethyl acetate extract of green banana peel has an antimicrobial effect on pathogenic bacteria causing food poisoning.
  The flowers are used for bronchitis, dysentery and ulcers; cooked flowers are given to diabetics; the astringent plant sap is used for hysteria and epilepsy, leprosy, fevers, haemorrhages, acute dysentery and diarrhoea and is also applied on haemorrhoids, insect and other stings and bites. Young leaves are placed as poultices on burns and other skin afflictions; the astringent ashes of the unripe peel and of the leaves are taken for dysentery and diarrhoea and are used for treating malignant ulcers. The roots are administered in digestive disorders, dysentery and other ailments. Banana seed mucilage is given in cases of diarrhoea. Norepinephrine, dopamine, and serotonin are present in the ripe peel and pulp. The first two elevate blood pressure; serotonin inhibits gastric secretion and stimulates the smooth muscle of the intestines. Bananas fight intestinal disorders such as ulcers, neutralize the acidity of gastric juices, reduce ulcer irritation by coating the

lining of the stomach and promote healing. The fruit is also used for burns and wounds. Ripe banana paste is spread on burns or wounds or with a cloth bandage for immediate pain relief, and banana leaves can also be used as a cool compress for burns or wounds. Banana helps with constipation and diarrhoea relief, arthritis, and anaemia, since potassium can help decrease blood pressure in potassium-deficient persons, and also reduces the risk of stroke. Bananas' vitamin A aids with healthy teeth, bones, soft tissue; vitamin B_6 helps the immune system, and promotes brain and heart health; vitamin C aids with healing wounds, the growth of tissue and ligaments, increases the absorption of iron and the formation of blood and helps to rebuild the immune system; and vitamin D helps the body to absorb calcium. Banana is an excellent food for weight loss; although it is high in calories and carbons, it is a source of energy to help complete a longer workout. It does not contain even trace amounts of fat, cholesterol, or sodium, which makes it a healthy food option, even for restrictive diet plans.

In folk medicine, banana frits are used in hypertension, cooked flowers are good for diabetics, and banana sap is astringent and used to treat a wide variety of ailments, including leprosy, hysteria, fever, digestive disorders, haemorrhages, epilepsy, haemorrhoids, and insect bites. Roots and seeds are used to treat digestive disorders. Bananas' natural compounds act as antihypertensive drugs. Its high levels of potassium may lower the risk of a stroke, and a mixture of banana and milk alleviates stomach acidity. Banana skin rubbed on mosquito bites reduces swelling and irritation.

- **Other uses**: It is a fruit plant. Bananas provide many health benefits; they can be eaten alone or combined with a fruit salad, added to jello, or made into a milkshake. One of the most affordable fruits in the marketplace, they are found all year round nearly everywhere in the world. The peel and pulp of fully ripe fruit have antifungal (against tomato disease) and antibiotic (against mycobacteria) principles and are successfully used to treat tomato fungus in agriculture. Banana leaves are used by locals in different countries for everything from umbrellas to construction materials. Banana and plantain fibres are used throughout the world to weave ropes, mats and other textiles. Tannins in ripe banana peel act as tanning leather agents. In the food industry, bananas and banana peels are the source of materials for the development of many food products including puree, flour, chips, vinegar, jelly as well as animal feed and fabric materials from the peel, pseudostem and the leaves. It is a potential source of biofuel. Banana lectin has been mentioned as a potent method for inhibiting HIV virus replication. Banana fruits, either raw or cooked and ripe or unripe, are used in the human diet. Ripe bananas are sliced in fruit salads and sandwiches, and can be mixed with rice, jam, chips and sauces. The fruit provides nutrients and contains carbohydrates, iron, phosphorus, karyotin, vitamin C, thiamine, ascorbic acid and niacin. The fruit is rich in phytochemical compounds including carotenoids, phenolics, alkaloids and some organosulfur and nitrogenous compounds.
- **Caution**: The high level of carbohydrates combined with the tryptophan content in the fruit is feared to affect the user's state of awareness, influencing brain activity and bringing on sleepiness. Migraine headaches may be aggravated by the consumption of bananas and alcohol. Hence, the consumption of bananas with alcohol is not advisable. The consumption of bananas may cause allergic reactions in a few people.

Fruiting branches

- **Arabic name**: Ass, Mirseen, Yass, Shajarat Al-Sukker, Hab-Alass
- **Scientific name**: *Myrtus communis* L.
- **Common name**: Common Myrtle
- **Family name**: Myrtaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Leaves and fruits.
- **Chemical constituents**: Leaves contain an essential oil (0.3-0.5%), of which the main components are myrtol, tartaric acid, tannins, resins, bitter compounds, glucosides and flavonoids. Fruits contain a tonic and analeptic tannic material. Essential oil's estragole content is 58-88 ppm, and its methyl eugenol content is 0.2%-6%.
- **Pharmacological action**: It is astringent, antiseptic and a stimulant. The plant is used for blisters, abdominal colic, coughs, diarrhoea, fevers, headaches, nosebleeds, stings, and ulcers and also as an insecticide. Myrtle is the best antioxidant, and may normalize hormonal imbalances of the thyroid and ovaries as well as balance hypothyroidism. It helps the respiratory system, chronic coughs and tuberculosis, and may support the immune system in fighting colds, flu and infectious diseases.
  Its leaves are used for hair care, skin diseases, cataplasm and urinary system infections. The roots are antiseptic, astringent, antimicrobial, diuretic, anti-haemorrhoidal, anti-spasmodic, anti-bacteria and anti-diarrhoeal. They are used for gastrointestinal disorders. A mixture of dried leaves and flowers with other aromatic herbs may be used in hair gel. Myrtus ash is used in deodorants, purifies freckles and removes leucoderma. Fruits, either green or dry, cure diarrhoea, epilepsy and headaches. They are carminative, diuretic and anti-tussive. Rubbing the head with fruit extract grows head hair. It is also an appetite stimulant and styptic. The powder of dried leaves is used for rashes or skin injuries, and the oil from bark, leaves and flowers is antiseptic and a nasal decongestant.
- **Other uses**: The fruits are edible, and can be made into jam with sugar. The plant is an ornamental and aromatic, and is used as a hedge in gardens.
- **Caution**: No reports.

Plants in the field

- **Arabic name**: Tipigh, Dokhan, Tetin
- **Scientific name**: *Nicotiana tabacum* L.
- **Common name**: Tobacco
- **Family name**: Solanaceae
- **Growth habit**: Herb
- **Life cycle**: Annual or Perennial
- **Part/s used**: Leaves, and the whole plant except seeds.
- **Chemical constituents**: Camphor, malic and citric acids. In fresh leaves, albumin, gums, resin, tannic acid and tannins, sugar, wax, calcium oxalate and essential oils. Alkaloids (1-4%) of the dried leaf are of the pyridine group, especially nicotine, nicotelline, nicotimine, asparagine, tibaein, nornicotine and anabasine. The smoke contains large amounts of harman (a beta-carboline alkaloid, methyl pyridines) and small amounts of myristicin, carbon monoxide, hydrogen sulphide, hydrogen cyanide, and considerable amounts of nicotine. Seeds are rich in oil and fatty acid (33-40% composed of linoleic oil).
- **Pharmacological action**: It is antispasmodic, diaphoretic, diuretic, emetic, expectorant, sedative, sialagogue, and homeopathic. The plant is analgesic, anaesthetic, antibacterial, anti-convulsive, anti-aphrodisiac, anti-avuncular, anti-fatigue, anti-estrogenic, antifungal, anti-glaucomic, antioxidant, anti-stress, antiviral, an aromatase inhibitor, arrhythmogenic, carcinogenic, bronchoconstrictor, bupivacaine kinetic and an angiogenesis inhibitor. Tobacco is discutient, errhine, antiseptic, and sialagogue.
  The nicotine is used for scabies and parasites, and as a smoke insecticide. The nicotinic acid amide is used for vitamin PP deficiency and Pellagra disease resulting from a bad nutritional status. The acid has a wide usage in chronic liver diseases, waxations, convulsions of vascular blood and sclerosis and in wounds and ulcers.
  In folk medicine, moistened leaves are placed on rheumatoid swells and skin diseases, insect stings and painful haemorrhoids. Dry leaves are used for nausea and contagious transmittable diseases.
  A tincture of the fresh plant is a sedative for respiratory system disorders in children, and its water is advised for brain complications from fevers, brain and spinal cord affections and cholera. Nicotine, and in some instances tobacco, are potent in the relief of tetanus.
  Smoke inhalation sometimes relieves a tickling cough. An ointment is valuable for scabies and urticaria, and the leaves, in combination with *belladonna* or *stramonium* leaves, are excellent for old, obstinate ulcers and painful tumours. Inspissated juice cures facial neuralgia, and leaf infusions are used as a compressor for gout, orchitis, epididymitis, buboes, other glandular inflammations, scirrhous and scrofulous tumours, phimosis, paraphimosis, boils, painful haemorrhoids, and erysipelatous inflammations. Rectal ascarids and lumbricoid worms have been expelled by the inflation of the rectum with tobacco smoke, or with an injection of the infusion. It has also been used to destroy maggots in the nose and ear.

In folk medicine, tobacco parts, products or formulations are included in different treatments to cure illness problems in different parts of the world, including snuffles, vomiting, narcosis, dysmenorrhoea, worms, sores, indisposition, chills, snake bites, pulmonary ailments, myiasis, headaches, wounds, ringworms, fungal skin diseases, ulcers, bruises, mouth lesions, stomatitis, mucosa, kidney diseases, bronchitis, pneumonia, external parasites, asthma, dermatitis, and infectious ulceration pediculicide. These can also be used as an insect repellent. The leaves are used with palm oil to prevent baldness, and wet leaves are applied externally for rheumatic swelling, skin diseases, stings and painful piles. Dried leaves are used against nausea and travel sickness. Fresh roots are used for asthma, indigestion, and bloodshot eyes, and the seed is used orally for rheumatism, hoarseness, vision and therapeutic ends. *Nicotiana* leaves are used alone or in combination in medicinal plasters and teas. Its extract is used orally for tiredness, to ward off diseases, and to quiet fear.

- **Other uses**: When used in industrial field crops, nicotine is an insecticide.
- **Caution**: The genus includes some species that may contain pyridine alkaloids: nicotine and anabasine. Nicotine is very dangerous and highly toxic, and the fatal dosage for adults is about 40mg (much lower for children). It results in various forms of cancer, the loss of teeth, and respiratory and cardiovascular diseases. One cigarette contains about 1g of tobacco, which is equivalent to at least 10 mg of nicotine, but these figures may vary greatly.

  Toxicity symptoms include a rapid pulse, irritable heart (tobacco heart), disordered innervation, nervous prostration, general debility, emaciation, dyspepsia, and a train of other evils, including amblyopia in cases of the excessive use of tobacco. Chronic poisoning may result in epithelial cancer of the mouth, tongue, or lips, or other destructive ulcers of the mouth, follicular pharyngitis, bronchorrhea, feeble and rapid cardiac action and colour-blindness. Nicotine kills by paralysis of the heart, or respiratory paralysis (asphyxia); at low to moderate doses it stimulates the central nervous system. Effects include tremors, an increase in behavioural activity, alertness, the facilitation of memory and the release of epinephrine from the adrenal glands, and increases in heart rate and blood pressure, and it also inhibits stomach secretions and stimulates bowel activity. A low dose stimulation of the central nervous system is followed by depression at high doses, and death results from a failure of respiration due to the paralysis of the breathing muscles.

  Chronic use of tobacco causes brain and behavioural changes. Symptoms of tolerance include dizziness, nausea and vomiting. The withdrawal syndrome for nicotine is physiologically and physically stressful, resulting in confusion, anxiety, irritability, drowsiness, dizziness, headaches, nausea, disturbed sleep, increased eating and weight gain.

Another cultivar

In the field

- **Arabic name:** Qezhah, Habat Al-Baraki, Kammon Aswad, Haba Sawdai, Shoneez
- **Scientific name**: *Nigella sativa* L.
- **Common name**: Nutmeg Flower, Black Cumin, Nigella, Fitches
- **Family name**: Ranunculaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Mature dry seeds and oil.
- **Chemical constituents**: Seeds contain essential oil (0.5%-1.5%) and 90% monoterpenes, mainly composed of p-cymene (33.8%), thymol (26.8%), and only small amounts of thymoquinone (3.8%), the isoquinoline alkaloid, as well as a fixed oil (approximately 33%) with a special smell and acrid taste. Oil contains thymoquinone (0.5%), and nigellone (5%), which is responsible for the oil's medical activity. Oil also includes fatty and amino acids, alkaloids, and glycosides, among which is the toxic saponin glucoside melanthin, phenols, carotene, and minerals, of which the most important are phosphorus, magnesium, iron, calcium, potassium, manganese, zinc and some digestive enzymes. Glucosides and essential oils are also present.
- **Pharmacological action**: It is an aphrodisiac, tonic, diuretic, antispasmodic, emmenagogic, cholagogic, carminative, anthelmintic, anti-parasitic (scabies, lice, and different fungal infections), galactagogue, hypoglycaemic and antibacterial. It is used for anaemia, asthma, colds, cough, hair care, colds, skin diseases including psoriasis, sebaceous glands, warts, skin excrescence, headaches, pulmonary diseases, rheumatism, stomach pains, acne, leucoderma, and bladder, liver and arthritis diseases. The seeds possess antibilious, antiseptic, diaphoretic, and lactagogue properties. They are mainly used for digestion, menstrual disorders, bronchitis, arthritis, colic, dermatitis, dysmenorrhoea, orchitis, congestion, flatulence, haemorrhoids, and polio. Flowers have a lemon-carrot scent and are placed among clothes to repel insects.
  The nigellone is an expectorant, and when used in a few drops can cure asthma and whooping cough, and is sold in capsules; it is also used in folk medicine for chest diseases.
  The oil is used for coughs, and is carminative, emmenagogue, and anti-tussive. It is also used for chest diseases (3-5 drops in a cup of tea or coffee), as an intestinal sedative, and for saliva. It is a strong tranquillizer and carminative. Its oil is important in strengthening the immune system, for anti-constriction, and for curing migraines and psychological disorders. It is useful in stimulating bile and urine secretions, and for killing intestinal microbes.

In folk medicine, the oil is used to strengthen the immune system and increase body vigour through general strengthening and as an appetizer. It is also used for coughs, bronchopneumonia, and chest and abdominal diseases. The herb has been used for ages in the Middle East, Africa and South Asia as a remedy for allergies' inflammations, for the purification of blood and for strengthening the immune system. It is effective against diseases such as bronchitis, asthma, neuropathies and poor digestion. It is also used to relieve congestion and acts as a general tonic to boost immune functions. It is famous for enhancing blood circulation. Its regular usage has shown that black seed oil controls blood pressure and cholesterol.

- **Other uses**: Seeds can be a substitute for pepper, and are sprinkled on bread and cakes. It is a flavouring food, and is used as a spice for cheese and sweets and as an aroma for drinks. A seed extract is available in markets for use in different food stuffs.
- **Caution**: Large seed or nigellone doses should not be taken. Raw seeds may be toxic if taken internally in large doses.

The plant in field

Seeding stage

- **Arabic name**: Rehan, Habaq, Sulaimani, Rehan Sulaiman
- **Scientific name**: *Ocimum basilicum* L.
- **Common name**: Basil, Sweet Basil
- **Family name**: Labiatae / Lamiaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Seeds, flowering stems, leaves, the whole plant, and oil.
- **Chemical constituents**: Basil oil consists of ocimene, linalool, cineol and eugenol. Camphor species contain camphor. Sweet basil has a distinct aromatic smell. The plant contains terpenes, sesquiterpenes, tannins, glycosides and saponins.
- **Pharmacological action**: It is an antidepressant, antiseptic, stimulant, haemostatic, diaphoretic, carminative, diuretic, demulcent, aromatic, expectorant and tonic. It is used for cataracts, colds, diarrhoea, enteralgia and wounds. Basil is beneficial for alleviating mental fatigue, spasms, rhinitis, and stomach aches. It is a mild sedative and galactagogue, and is used in first aid for wasp stings and snake bites.
  A leaves decoction is given for hypotension and bronchitis, and is useful for coughs, colds, fevers, and diarrhoea. It is a stomachic, and is also useful for ulcers and mouth infections. A leaves and flowers infusion is carminative, removes intestinal colic, is appetitic, stimulates stomach secretions, and is diuretic, aromatic and galactagogue. The leaf paste of the camphor species is used against skin diseases, and branches are used for psychological diseases. Basil is a digestive and calming. A root decoction is useful for malarial fever. Seeds are a household remedy for heat when used as a syrup in the summer season and also for gonorrhoea and ringworms. It is useful for palpitations and dizziness. Its decoction in water is used for dysentery, some sexual diseases and chronic diarrhoea.
  Basil is of an aromatic smell, and is used for home fragrances and perfuming the mouth by chewing the leaves. It is mainly used in the perfume industry for brain stimulation. A plant decoction is useful for menstruation pains when drunk directly after birth to prevent the detention of placenta in the uterus. Externally it is added to bathwater, while its poultices are made for wound healing.
  Basil extract mixed with honey is used for coughs, and its oil at 5-10 drops in 10 ml of almond or sunflower oil is rubbed on the chest for asthma and bronchitis.

The plant's perfume helps refresh the memory, improving concentration, especially when tiring. It is a good nerve tonic after a stressful day. It has a sweet liquorice-like fragrance.

Oil is useful in skin care, has curing properties, and is used specifically for rheumatism, colds, cardiac diseases and arthritis since it is composed of camphor, linalool, eugenol and methyl-cyanamate. It is used to aid with convulsions and tension.

In folk medicine, the oil is used as an antioxidant and to stimulate the blood cycle, and is useful for pimples, acne, warts and intestinal worms. It strengthens the immune system, is useful for bronchitis and colds, and expels phlegm, diarrhoea and dysentery.

- **Other uses**: Fresh green leaves are used in salads, soups, stews, pasta sauce, poultry, and meat dishes and to flavour vinegar and teas. Basil is one of the most popular culinary herbs with a particular affinity for tomatoes. It is used in butters and vinegars. It is a bee herb. The plant repels flies and is good to have near doors at home. It is often used for companion planting. It is an insecticidal compound containing oils that have excellent activity against mosquitoes, ants, mites, roaches and other insect pests. Its essential oils are antifeedant and have growth inhibitory activity.
- **Caution**: Basil should not be used during pregnancy, as it can be a skin irritant. Its estragole content is as follows: 238-8780 ppm (plant), 5-85% (essential oil). The presence of high amounts of estragole is genotoxic and carcinogenic in rodents. It also contains camphor estragole (0.4% in the herb) and eucalyptol (8% in the essential oil); 1H: leaves and flowering tops' essential oil: estragole (20-50%), eucalyptol (7.710%), methyl eugenol (2%), camphor (1%), α-and β-thujones, safrole and carvacrol.

Another cultivar

- **Arabic name**: Zaytoon
- **Scientific name**: *Olea europea* L.
- **Common name**: Olive
- **Family name**: Oleaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Fruits, leaves, and oil.
- **Chemical constituents:** Olive contains tannin, maltitol, sucrose, organic acids (maleic, tartaric, lactic and glycolic), fatty acids (oleic, linoleic and palmitic), oil (15-20%), protein (4%), and minerals including phosphorus, sulfur, potassium, magnesium, calcium, chlorine, iron, manganese, and copper. It also includes phenols, chlorophyll, carotenoids, pheophytin and flavouring compounds, vitamins (A, B, C, D and E) in large quantities, free fatty acids, mono-and diacylglycerols, hydrocarbon compounds, phenols, chlorophyll, carotenoids, pheophytin and a smell and flavouring compound. Olive oil contains tocopherols (alpha, beta, gamma and delta) which all act as natural antioxidants, preventing the formation of radicals.
  Phenols, oleuropein, flavonoids, phenolic glucosides are in olive leaf extracts; ligstroside, disaccharide containing the hydroxytyrosol moiety, luteolin-O-glucoside, hesperidin, apigenin-7-O-glucoside, apigenin-5-O-glucoside, apigenin-4'-O-glucoside, dimethyleuropein, oleanolic, caffeic and p-coumaric acids, hydroxytyrosol, cyanidin-3-O-glucoside and cyanidin-3-O-rutinoside are in the fruit and leaves; and polyunsaturated fatty acids of glycerolipids are in leaves and fatty acids. The seeds' oil is mainly made from linoleic, oleic and linolenic acids, as well as small amounts of palmitoleic acid, and palmitic acid is the main saturate in oil. In addition, glycerolipid is present in the fruit.
- **Pharmacological action**: The oil is an aphrodisiac, and is used for asthma, constipation, colds, coughs, and liver and gallbladder diseases associated with digestion disorder. It is an anti-tussive, used for nerve inflammation, diabetes, gingivitis, hair care, mouth diseases, pulmonary ailments, rheumatism and skin care, and as a stomachic. It is an intestine laxative, emollient, choleretic, bile stimulant and antioxidant. Rubbing oil on infected body organs is a cure for anaemia and rickets. The oil dissolves kidney stones and is used as a skin lotion to protect against sunlight. It protects against breast and skin cancers, cures intestinal cancer and protects against cardiac diseases.

It is useful for abscesses, alopecia (including as a hair tonic), hand and foot cracks, rheumatism, and herpes, and removes face and neck wrinkles. Olive contains tannins that are hypoglycaemic and lower body temperature. A wood decoction cures mouth pain, and a leaves decoction is anti-tussive. Chewed olive leaves or their decoction are hypoglycaemic, and leaves' powder is useful in regulating blood pressure and acts as a hypotensive, since it contains diuretic substances and tannins that reduce blood sugar and febrifuge. Oleic acid reduces LDL-cholesterol in the blood, which is known to close or constrict blood vessels, and increases HDL-cholesterol. Olive leaf extracts are rich in oleuropein and have antihypertensive activity. They are prepared as antiradical agents in a composition with oil for the treatment of halitosis with other plant species. Leaves are hypotensive, diuretic, and anti-diabetic; they facilitate hepatic functions, and are a febrifuge and antioxidant. The roots are anti-malarial, hypoglycaemic, hypotensive, cholagogue, anthelmintic and laxative, and are used for blisters, bone fractures, lithiasis, colic, nephritic, cataracts, constipation, skin rashes and ulcers.

In folk medicine, the oil is used for skin diseases and afterbirth to stretch a baby's muscles, as a massage oil and to prevent skin odour.

- **Other uses**: The oil and fruits are used in food in different forms. The oil may also be used for soap production, especially old stored oil. Olive is a fruit tree, and sometimes is grown on street sides.
- **Caution**: Exposure to plant juice or sap or a puncture wound may produce a skin rash or irritation. Skin wounds can be extremely painful, causing large blisters and skin burning.

Flowering plant

- **Arabic name**: Sabir, Teen Shawki, Sabbar, Teen Hindi
- **Scientific name**: *Opuntia ficus-indica* (L.) Miller
- **Common name**: Indian Fig, Prickly-Pear Cactus, Barbary Opuntia, Nopales, Paddle Cactus
- **Family name**: Cactaceae
- **Growth habit**: Succulent tree
- **Life cycle**: Perennial
- **Part/s used**: Fruit and stem sap, leaves, and flowers.
- **Chemical constituents**: Linked flavonoid (quercetin, kaempferol and isorhamnetin), maleic acid, phenolic compounds, glutathione (GSH), ascorbic acid, phenolic compounds □-sitosterol, glutathione. High percentage of water (up to 90%) and mineral elements (20%) including sodium, manganese, iron and calcium (1.5%), vitamins A, B_2, C and E, fibre (10%), protein (1-4%), crude protein and sugars (6-14%). Betalains, indicaxanthin and betanin, glycoprotein, pigments, polysaccharide ion in fruit skin, carotenoids, and ferulic acid, which is the chief derivative of hydroxycinnamic acid. In addition, there are alkaloids, 3-methoxytyramine, candicine, hordenine, N-methyltyramine and tyramine. Seeds contain protein and oil, and fruits contain pectin and tannin.
- **Pharmacological action**: The plant is an antioxidant, hypoglycaemic, anti-diarrhoeal, anti-apoptotic and antimicrobial. Extract and compounds are used for preventing and treating brain diseases, Alzheimer's disease, strokes, Parkinson's disease, and cell and tissue damage caused by ischemia or cardiovascular system diseases, such as myocardial infarction.
  O. ficus-indica cladodes provoke an increase in the number of secretory cells. The gastric fibroblasts are probably involved in the antiulcer activity.
  □-sitosterol in the skin is used for the treatment of wounds, burns, stasis ulcers, cutaneous wounds, chemical, mechanical or laser peel burns, chapped lips, cracked nipples, diaper rash, severe cuts, abrasions, sunburn, diabetic ulcers, trophic lesions such as deceits ulcers, allergic ulcers, dehiscence wounds, acral lick dermatitis, lacerations, and wounds that are traumatic in origin and resistant to the natural healing process. The dried fruit powder of certain varieties possesses pronounced inhibitory action on the gastric lesions of rats.

Sticky juice promotes wound healing. Poultices are applied to suppurating sores on both humans and animals. The colouring agent extracted from *Opuntia ficus-indica* contains betalain. The betacyanin in betalain prevents the transformation or onset of liver cancer. It is an immunoactive agent containing a fruit extract. The Sicilian form contains betalain antioxidants, betanin and indicaxanthin, with the highest levels in their fruits. The gel-like sap is a hair conditioner, and the pulp and juice treat wounds and inflammations of the digestive and urinary tracts; it is used for the treatment and prevention of skin scars, and stem consumption reduces blood glucose levels. Infusions and cataplasms are diuretic, antispasmodic and emollient.

- **Other uses**: The mucilage of *Opuntia ficus indica* is used as an edible coating for strawberries. The fruit is used in traditional Korean wine, and betaxanthin is a potential source for natural food colours. The extracts may be used in tanning, for the softening of meat, the removing of flesh from bones, the removal of meat processing waste, the preparation of milk products such as cheese, wound healing, the removal of necrotic tissue, and in anti-inflammatory compounds. Fruits are used to make candy, sweets, jam and drinks. Seeds are ground and used and flowers can be eaten and used in soup.
- **Caution**: The consumption of large quantities of fruits may cause constipation because of the hard seeds; it is better for children to consume fruit juice rather than the fruits themselves in order to avoid constipation in the intestines. Mucilage components may bond with other food materials and cause a problem of food passage and food ingestion and therefore the person who ingest the fruits of this plant may not feel hunger. Extracted bictal from stems affects the time needed for blood coagulation and liquefaction. It is possible to remove the stinky small spines inserted in the hand when peeling the fruits through rubbing the hands or even by washing them with sesame oil.

The flower and honeybee

Spiny cultivar

Another cultivar used as an ornamental

- **Arabic name**: Attara, Mardakosh, Mardakosh Bar'ri, Mardakosh Hollow, Bardaquosh, Marzanquosh
- **Scientific name**: *Origanum hortensis* Moench
- **Common name**: Sweet Marjoram, Marjoram
- **Family name**: Labiatae / Lamiaceae
- **Growth habit**: Creeping herb
- **Life cycle**: Perennial
- **Part/s used**: Fresh and dried leaves, flowers, young and flowering stems, and essential oil.
- **Chemical constituents**: Marjoram oil (0.5-3%), yellow to dark in colour with a nice smell. The oil's main chemical constituents are terpinol (26%), geraniol (20%), sabinene, thymol, carvacrol, a-terpinene, y-terpinene, p-cymene, terpinolene, linalool (6%), cis-sabinene hydrate, linalyl acetate, terpinen-4-ol and y-terpineol. In the leaves are tannin, free materials, betagol, mineral elements, bitter base, carotenes, vitamin C and linalyl acetate.
- **Pharmacological action**: Internally, the herb infusion is used for coughs, asthma, phlegm, anorexia, and stomach and intestine disorders. It is a digestion stimulant, laxative, carminative, and stomach tonic. It relieves menstruation ailments and eases birth. It is a sedative for the neural system, depurative, diuretic and dissolves stones. It is hypertensive, hypoglycaemic, and lowers blood cholesterol and lipids. It causes weight loss when used in salads. The oil is anti-allergy, digestive, cures rheumatism, paralysis and chest diseases, relieves pain, and is antiviral and antispasmodic. It is used for eye ailments and glaucoma, deafness, lung and respiratory tract disorders, and as a hair tonic. It regulates female hormones, periods and is used for insomnia. Externally, the plant is used for arthritis, rheumatism and muscles. It cures colds and is used for mouth wash, and in baths with a flower infusion. It removes the smell of body perspiration, cures body diseases, cuts, sores and face rashes. It is a tranquillizer, anti-inflammatory, and a muscle relaxant.
  It is an analgesic, aphrodisiac, antiseptic, antiviral, fungicidal, antibacterial, cephalic, cordial, diaphoretic, emmenagogue, expectorant, hypotensive, nervine, stomachic, vasodilator and vulnerary. It calms the respiratory system and relieves migraine headaches. It works as a disinfectant and soothes nerves. Marjoram is excellent for general pains. It is also beneficial for stomach acidity. An infusion or tincture is used to soothe the stomach.
- **Other uses**: A spicy culinary herb, it is useful as a flavouring for soups, meat, vegetables, salads, omelettes, vinegars, jellies, and teas, and the flower head is used for crafts. Because of its strong aroma, it is used as a stewing herb and in sweet tea bags, powders and washing waters. Its purple dye is used for woollen products and its reddish dye for linens. The plant is a good bee herb. Its oil is used in perfumes and the soap industry. It is included in constituents of hair tonic oil. Dried leaves are a tea substitute and possess antimicrobial

activity, and therefore may be used as a natural preserving material that kills microbes. The plant's smoke is an insect repellent and improves odour in the air and in a place.

❖ **Caution:** It is advised not to be taken during pregnancy since the plant is a uterus stimulant.

Plant at vegetative growth satge

Late flowering stage

- **Arabic name**: Mardakoosh
- **Scientific name**: *Origanum majorana* L.
- **Common name**: Marjoram
- **Family name**: Labiatae / Lamiaceae
- **Part/s used**: Leaves, flowers, and young stems.
- **Chemical constituents**: Aromatic oil (0.3-0.4%) that is dark yellow in colour with an acceptable and nice odour, thymol and tannins.
- **Pharmacological action**: The plant relieves ailments. It is used as a body disinfectant, is antispasmodic and hypotensive, and reduces menstruation and eye ailments. It eases urination and is used for respiratory system disorders and coughs, and is also a carminative and expectorant. Its oil is anodyne, relieves toothaches and is used in rheumatism ointments.
  In folk medicine, the oil helps with relieving various illnesses such as coughs, digestion problems, respiratory diseases, stomach problems, cold sores, sinuses and headaches. It helps in the treatment of bacterial skin infections and wounds. Oregano oil aids digestion. It gives relief from allergies as it is sedative in nature, and helps reduce lice when applied on hair. Tea made with the plant is used for colds, tonsillitis, pharyngitis, and dyspepsia.
- **Other uses**: It is used as an additive spice and a flavouring agent in food.
- **Caution**: No reports.

- **Arabic name**: Parkinsonia
- **Scientific name**: *Parkinsonia aculeata* L.
- **Common name**: Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Retama, Paloverde, Mexican Paloverde, Jerusalem Thorn, Lluvia De Oro, Barbados Flower-Fence, Horse-Bean, Palo Verde, Retaima, Sessaban
- **Family name**: Leguminosae / Fabaceae
- **Growth habit**: Shrub or small tree
- **Life cycle**: Perennial
- **Part/s used**: Pods, seeds, leaf, fruit, and stem.
- **Chemical constituents**: Leaves of the plant have been reported to contain C-glycosyl flavones like orientin, iso-orientin, vitexin and iso-vitexin. The other constituents reported in leaves are C-glycosides; epi-orientin, a C-glycoside of luteolin that resembles orientin in composition; parkinsonin-A, a C-glucoside of 5-O-methyl-luteolin that is closely related to orientin and parkinsonin-B, a C-glucoside of 5,7-di-O-methyl luteolin that is stereochemistry related to epi-orientin. Also contains the flavone C-glycoside luteolin that is structurally elucidated as 7, 4'-dimethyl ether; 6-C-glucoside has also been isolated from the leaf extract, lucenin-ll, vicenin-II, diosmetin 6-C-β-glucoside, apigenin, luteolin, kaempferol and chrysoeriol were also detected. In addition, a flavanone with epoxy-isopentyl moiety named as parkintin, has been isolated from the leaves. Glycosides, glycerides, flavonoids, reducing sugars, sterols and traces of minerals. Stems have yielded compounds like glycerol β-butanoate α α′-dipentanoate, β-sitosterol, glycerol β-heptanoate K-octanoate, β-sitosterol-β-D-glucoside and sucrose. Terpenoids, saponin, steroids, essential oil and glucose are also produced by the plant.
- **Pharmacological action**: The plant cures Parkinson's disease. Leaf, fruit and stem decoctions are taken orally as an abortifacient; these are also applied externally to treat fever, atony and malaria. Flower and leaf extractions in alcohol are applied as a poultice to treat rheumatism. It is a well known medicinal shrub for its beneficial effects as an antipyretic, anti-malarial, diaphoretic and abortifacient. It possesses antibacterial, anti-diabetic, antioxidant, anti-inflammatory, hypoglycaemic, anti-rabies, amoebicidal, antispermatogenic and other properties (e.g. effect of heavy metals on growth).
  In folk medicine, the plant has been used for centuries as an antipyretic, diaphoretic and abortifacient. Recent research has indicated its antibacterial, hepatoprotective, anti-fertility and anti-diabetic uses. The plant is also an important source of various types of compounds with diverse chemical structures. Leaf, fruit and stem decoctions are taken orally to treat fever, malaria and as an abortifacient.

- **Other uses**: It is an invasive weed in certain countries. The fruit (the pulp inside the seedpod) is eaten raw, and it has a sweet flavour, containing up to 60% sugars. Seeds have in the past been used in Mexico for food and fodder, hence foliage and pods are browsed by livestock. Young branches are lopped to feed goats and sheep. The plant is important in apiculture; its large, fragrant, golden yellow flowers easily attract bees. It is also used as a fuel, as the sapwood is yellowish and thick and the heartwood is light or reddish-brown. The wood is moderately hard and heavy, fine-textured, and brittle; it burns well and is used for firewood and charcoal. Plants' heavy timber is generally too small for sawn applications but finds use as light poles and posts.

  The tree is used for erosion control and reforestation in sandy, arid areas. It is a useful plant for the reclamation of wastelands, gullied areas and mining spoil. It can grow in the presence of heavy metals, and therefore may be cultivated in polluted areas where it can resist heavy metals' toxicities. It provides a large amount of leaf litter that can be applied as soil mulch. The plant forms impenetrable hedges and makes an effective windbreak.

  P. aculeata can be used for shade or shelter. It is an attractive ornamental with unusual foliage, vivid flowers and a smooth, green bark boundary or barrier or support. Its browse resistance and stout thorns make it valuable as a live fence for protecting arable fields in arid and semi-arid areas.

- **Caution**: The plant is poisonous; its leaves have been reported as toxic, at times containing hydrocyanic acid.

- **Arabic name**: Zahrit Al-Sa'a, Ward Al-Sa'a, Zahrit Al-Alam Alhamra'a
- **Scientific name**: *Passiflora incarnata* L.
- **Common name**: Passion Flower, Maypop, Purple Passionflower, True Passionflower, Wild Apricot, Wild Passion Vine
- **Family name**: Passifloraceae
- **Growth habit**: Climber Shrub
- **Life cycle**: Perennial
- **Part/s used**: Leaves, branches, flowers and gum.
- **Chemical constituents**: The plant contains benzoflavone, flavonoids, vitexin and iso-vitexin, apigenin, chrysin, cyanogenic glycosides, alkaloids, phenols, volatile, tri-substituted benzoflavone moiety, flavone-C-glycosides based on apigenin and luteolin, C-glucosylluteolins orientin, homoorientin, leucine 2, linoleic acid, gynocardin, oligosaccharides, three indole alkaloids (harmane, harmine, and harmol), □-carbolines, □-carboline alkaloids and flavone C-glycoside isoscoparin-2"-O-glucoside. Essential oil consists of hexanal, benzyl alcohol, linalool, 2-phenylethyl alcohol, 2-hydroxybenzoic acid Me ester, carvone, trans-anethole, eugenol, isoeugenol, □-ionone, □-bergamotol, phytol, vitexin, and fatty acids (palmitic and oleic).
- **Pharmacological action**: The plant is emollient, sedative, hypnotic, antispasmodic, anodyne and antioxidant. The benzoflavone inhibits the aromatase enzymes, thus preventing the oxidation of testosterone to produce estrogen. The plant is also used for nervous tension, insomnia, epilepsy, morphine addiction and central psycholyptic activities. It has analgesic or anxiolytic actions. The plant's extract is used in a medicine composition for the prevention of skin ageing. Traditionally, a form of chewing gum has also been produced and used as a sedative.
  A drink made from the plant helps to stop or reduce anxiety and works as an aphrodisiac. It is used for impotence in both sexes. The plant works mainly on the neural system and brain and is a tranquillizer. A flower bud infusion is used for nervous disorders.
- **Other uses**: The fruit of this variety is sometimes used for jam and jellies and can be eaten. The plant is an ornamental.
- **Caution**: The plant may cause vomiting; it should not be used when taking monoamine oxidase. Pregnant women should never take it since it stimulates the uterus muscles. Children and young people should not use light preparations of the plant. The plant contains cyanide and therefore must be used under medical supervision. It is also a hypnotic.

Wadi Al-Moojib

- **Arabic name**: Etter, Khubayzi Efrangia
- **Scientific name**: *Pelargonium peltatum* (L.) L'Hér. ex Aiton
- **Common name**: Geranium, Ivy Leaved Geranium
- **Family name**: Geraniaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: Stems, leaves, and volatile oil.
- **Chemical constituents**: Essential volatile oil made from various chemical constituents including a-pinene, myrcene, limonene, menthone, linalool, geranyl acetate, citronellol, geraniol and geranyl butyrate.
- **Pharmacological action:** Geranium oil is astringent, haemostatic, cicatrizing, cytophylactic, diuretic, deodorant, styptic, tonic, vermifuge and vulnerary. The oil helps with the treatment of acne, bruises, burns, cuts, dermatitis, eczema, haemorrhoids, and lice and is also a mosquito repellent. It is used for ringworm, ulcers, breast engorgement, edema, poor circulation, sore throat, tonsillitis, menopausal problems, stress and neuralgia.
- **Other uses**: A blue dye prepared from the flower petals is used in painting. Its essential oil is used in cheap perfumes and detergents.
- **Caution**: Geranium oil does not cause any side effects, but it can cause sensitivity in some people. Since the plant balances the hormonal system, it might not be advisable to use it during pregnancy.

Different flower colours

- **Arabic name**: Ettrah, Gharnooqa, Etter Baladi, Atrashan, Etter Laymoni, Etter Caphori, Etter Sathabi
- **Scientific name**: *Pelargonium roseum* L.
- **Common name**: Stork's-Bill Garden Geranium
- **Family name**: Geraniaceae
- **Growth habit**: Sub-Shrub
- **Life cycle**: Perennial
- **Part/s used**: All vegetative parts, flowers, leaves, and stems.
- **Chemical constituents**: The plant contains an aromatic oil (0.25-0.5% of its fresh weight); this is not more than 0.01% in the stem. On average, the volatile oil percentage in green material ranges between 0.1-0.17%. It is made from alcoholic compounds including geraniol, citronellol, linalool and methanol. The plant also contains tannic and gallic acids, starch, sugar, gum, pectin and colouring matter.
- **Pharmacological action**: The oil is a radical root scavenger, used for skin wrinkling and ageing, and helps repair damaged nervous systems and neurologic disorders such as multiple sclerosis. It is analgesic, antibacterial, anti-inflammatory, deodorant, diuretic, sedative, backache, styptic, antiseptic, astringent, and tonic. It is used for piles, colitis, cystitis, edema, hypoglycaemia, liver congestion and internal bleeding. It is excellent as an injection for flooding, leucorrhoea, diarrhoea, children's cholera, chronic dysentery and asthma. It slows down circulation, and is also effective for menstruation, menopause and throat sores. Externally, it is used for bruises, burns, cuts, eczema, haemorrhoids, insect bites, rheumatism, dry and oily skin and wounds. It benefits indolent ulcers, and is considered beneficial as a douche for womb problems. Geranium has soothing qualities and is helpful in relieving symptoms of anxiety, scrapes, nail fungus, sunburn, insomnia and varicose veins. It has been shown to be an insecticidal that acts as a natural insect repellent. It is useful in treating gastrointestinal bleeding, diabetes and acute glomerulonephritis (Bright's disease).
  The plant is a source of the famous geranium oil known as balance oil; it is a stimulant, and cures the menopausal syndrome, palpitations, psychological disorders, bile problems and depression. It is suitable for restoring balance to all kinds of skins, and cures and alleviates skin inflammation.
- **Other uses**: Geranium oil is used in food, perfumes, cosmetics, and soap. However, it is not usually used for medical purposes but only in a few cases as an alternative to rose oil. It is added to formulations to provide an acceptable odour. Geranium is a good garden plant. Tea is prepared from its leaves and flowers or its oil infusion.

❖ **Caution**: Geraniol and linalool are toxins; people may consequently suffer from immune system diseases, and pregnant women should avoid using the plant.

Plants of other flower coulers in the field

- **Arabic name**: Khubayzi Frangia'a, Gharnoqa
- **Scientific name**: *Pelargonium zonale* (L.) L'Hér. Ex Aiton
- **Common name**: Geranium
- **Family name**: Geraniaceae
- **Growth habit**: Shrub or sub-shrub
- **Life cycle**: Perennial
- **Part/s used**: The whole plant, essential oil, leaves, and stems.
- **Chemical constituents**: Aromatic oil consists of citronellol, geraniol, linalool, menthone, isomenthone, limonene, pinene and methyl eugenol. The plant contains phenols, coumarins, proanthocyanidins, phenolic compounds and tannins.
- **Pharmacological action**: It is an astringent used for intestinal problems, wounds, respiratory ailments, fevers and kidney complaints. The plant's tea is calming, relieves stress and anxiety, helps with diarrhoea, and relieves headaches and arthritis pain. It is face cleansing, stomachic and antibacterial. The essential oil is used in perfumes, aromatherapy, and as a toner on problematic skin.
  Its essential oil acts as an insecticide and deodorant, and deodorizes the home and pets. Dried geranium leaves can also be added to potpourri and sachets to repel insects in closets, dressers, and attics.
- **Other uses**: It is used as an aromatic plant that provides an aroma, and is used in perfumes, cosmetics and the food industry. Its leaves and stems are cooked as vegetables, similarly to spinach. Other species are used in perfumes, soap, ointments and the toothpaste industry.
- **Caution**: People with sensitive skin should avoid using geranium's essential oil because it can cause skin irritation and redness.

Plants of white colours

Flowering plant

- **Arabic name**: Baqdounis
- **Scientific name**: *Petroselinum sativum* Hoffm.
- **Common name**: Parsley, Petersylinge
- **Family name**: Umbelliferae / Apiaceae
- **Growth habit**: Herb
- **Life cycle**: Biennial
- **Part/s used**: Leaves, seeds, and roots.
- **Chemical constituents**: Essential oil with apiole and fixed oil, and, in aerial parts, menthofuran. □-Selinene, borneol, iso-borneol, phytol and 2-allyl-5-ethoxy-4-methoxyphenol. Caralene, □-farnesene, □-selinene, leden, cis-□-bisabolene, caryophyllene oxide, cis-sabinol and □-eudesmol in the fruit's oil.
  Octadecane and eicosane represent the major constituents of the unsaponifiable fraction. Fatty acids include myristic, palmitic, palmitoleic, stearic, petroselinic, oleic, and linoleic. Furocoumarins, ß-carotene and myristicin are present. Sucpetin, bergapten and proteins are in seeds, and flavones are in the fruits. Leaves and roots contain alkaloids, flavone glycosides, glycosides, sugars, oleoresins, fats, volatile oils, organic acids, carotene and vitamins C and K. Seeds contain vitamins A and C, mineral salts, aromatic and fixed oils and glycosides in fruits. The plant is rich in vitamins A and B, salts of calcium, potassium, sulfur and phosphorus.
  Parsley root, fruit, and foliage contain oil of common constituents, □-pinene, camphene, apiol and myristicin for the three organs, respectively. In addition, flavonoids, sugars, mucus, bergapten, xanthoxin, isopimpinellin, psoralen, and unidentified furocoumarins are also present.
- **Pharmacological action**: It is an antioxidant because of the ß-carotene and myristicin content; it is diuretic, stomachic, tonic, carminative, spasmolytic, emmenagogue, expectorant, anti-rheumatic, antimicrobial and anti-inflammatory. The plant is an excellent digestive, stimulant, laxative, and hypotensive. It is valuable in treating gallbladder problems, and its high iron content prevents anaemia. It is also used to treat menstrual problems, asthma, diarrhoea and coughs. Cosmetics composed of parsley extracts are body-slimming. Extracts of the aerial parts and their essential oil are diuretic and have antimicrobial activity. The volatile myristicin aroma may be an effective chemopreventive agent for cancer. It is included in a composition with olive oil or in a mixture of safflower and parsley oils as a deodorant and is used in the treatment of halitosis. The apiol and myristicin stimulate uterus contraction. Extracts of apiol have been tried as an abortifacient.

Externally, the plant is used to cure freckles, hence the face can be washed with a leaves and roots decoction and macerated leaves can be rubbed on the skin, and it may be used in a breast poultice for inflammations, lactating diseases and bending joints. It is a depurative, heals sores and wounds and is used for swellings and neurological pains.

Its oil is useful in hair care, and the seeds' oil is used for impotence, fever and menstruation disorders. The plant protects against kidney stones, as it dissolves calcium oxalates. Parsley is an appetizer, cell regenerator, and diaphoretic, and its decoction is anthelmintic, anti-colic, excitant and anti-bacterial. A seed decoction is used in cases of urine retention. Plant juice cleans the face and head, and also cleans the body from toxins and speeds up recovery from leucorrhoea and breast congestion. The face is washed twice with a parsley infusion in the treatment of boils, pimples and face flush.

In folk medicine, the oil is used in cell regeneration, as a blood cycle stimulant, as an antipyretic and laxative, to calm kidney ailments, to clean the body from toxins, to dissolve gravel, to purify scarfskin from boils and sores, to cure stomach and colon inflammations, and for liver and spleen diseases, jaundice, gonorrhoea, and breast tumours and inflammations.

- **Other uses**: It is a favourite culinary herb, and is most familiar in salads. The essential oil has a warm, spicy and herb aroma. As a culinary herb, parsley is regularly consumed by humans. Its leaf oil is extensively used in garnishes, and as a flavouring for salads, stews, soup, sauces and salad dressings. Because of its sharp aroma, it has been used as a room freshener.
- **Caution**: Parsley oil should be used with great care as there can be confusion between the leaf and seed oils which can have different effects. Seeds contain significant quantities of essential oil with the toxic apiole (19,650-36,580 ppm in seed; 0.36-22 ppm in leaf; 58-80% in fruit 1L), and it also contains elemicin and myristicin (727 mg/kg plant); 1H: leaves contain furocoumarin (psoralen 3.210.5%, bergapten 6.4-14.7%, 8-methoxypsoralen 0.53-5.3%, isopimpinellin 1.6-8%). Alkenylbenzenes in parsley leaf oil differ between cultivars in their chemical composition and in the percentage of their components. Large doses of parsley intake by pregnant women cause uterus pituitary membrane congestion. It is well known that rabbits suffer death when fed on parsley plants.

- **Arabic name**: Fasolia, Fathol
- **Scientific name**: *Phaseolus vulgaris* L.
- **Common name**: Bean
- **Family name**: Leguminosae / Fabaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Flowers, fruits and dry seeds.
- **Chemical constituents**: Vitamins A, B and C, protein, amino acids, sugars, mineral elements, coniline, cellulose, pectin and other substances including lipids (0.21%), starch (2.5%) and carbohydrates.
- **Pharmacological action**: It is a diuretic. A flower infusion is useful for gout, eczema, kidney colic and problems, diabetes, liver failure and albumenic urine. It cures kidney diseases. A pod decoction contains materials that reduce blood sugars. Green beans are good for cardiac patients and for hypertension. It is a sedative, blood cleanser, and liver tonic, and is given in cases of gout, kidney or bladder sand and rheumatism.
  Cooked and macerated bean seeds are used in poultices for burns and skin inflammation.
- **Other uses**: It is a vegetable crop. Beans are recommended for sportsmen. They can be consumed in salads and soup either macerated or canned. The water of bean seeds is used to wash coloured cotton clothes in order for them to retain their colours.
- **Caution**: Lectin and seeds contain cyanogenic glycoside linamarin (20 mg/kg), which may cause drowsiness and toxicity. However, lectin is inactivated by cooking.

Pods

- **Arabic name**: Nakheil, Balah, Tammer
- **Scientific name**: *Phoenix dactylifera* L.
- **Common name**: Date Palm
- **Family name**: Arecaceae / Palmae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Mature fruits, leaves, seeds, and the whole plant.
- **Chemical constituents**: Glucans, minerals, fatty acids, carbohydrates (75%), proteins in stones, flavonoids, mainly flavones, flavanones and flavonol glycosides in fruits, and tannin. Pectin (4%), cellulose (4.15-6.48 g/100g), lignin (0.1-0.3%), proteins (1.5-2%), amino acids (lycine, lucin, isoleucine, thrutine, phenyl alanine, valine, arginine and histidine), lipids (2.5-7%), organic acids, vitamins (thiamin, riboflavin, niacin, folic acid, butin and ascorbic acid), sugars (70% in ripe fruit and 20-30% in unripe fruits including glucose, fructose and sucrose), ash, and vitamins. Fruits also contain mineral elements including potassium, phosphorus, copper, calcium, iron, sulfur, chlorine, magnesium, manganese, zinc, cobalt and fluorine. In addition, invertase, pectin, and cellulose analyzing enzymes, and cellulose fibres (4.15-6.48%) are present.
- **Pharmacological action**: The plant's fruits affect the immune and neural systems and are considered as a complete food. The fruits are useful for pregnant women as they ease birth and increase lactation, and are also useful for children and young people, as they normalize hormonal activity and regulate organ functions. They are useful for intellectuals and sports players and protect against diseases because of their high sugar content. Fruits soaked in warm water are useful for constipation, nerve weakness, anxiety, insomnia, and some psychological problems. They are recommended for cardiac disease patients, such as those who suffer from hypertension and sclerotic vascular diseases, anaemia and haemorrhoids. Dates stimulate digestive secretions, protect against constipation and cure stomach and blood acidity.
  Unripe dates prevent afterbirth bleeding, act as a tranquillizer, delay ageing, protect against cancer, are useful in curing some eye diseases, strengthen eyesight, and prevent night thirsts and skin diseases. They protect against liver diseases, lip sores and cracks, measles, and nail and hair trichorrhexis. They are useful for aged persons who suffer from hearing weakness or deafness. They stimulate potency and sexuality in men, and stop haemorrhoid bleeding and gingivitis. Seeds reduce high blood pressure, and strengthen uterus muscles and constrictions. Dates cure coughs; phlegm and bronchitis.They are used to keep teeth clean and for teeth

care. They are anodyne and a diaretic, and are useful for anaemia, whooping cough, colds, and urinary tract disorders. In addition, dates are a nerve tonic and help in constructing brain cells.
In folk medicine, it is believed that a decoction of grounded date palm seeds cures diabetics. It has an anti-tumour activity because of its polysaccharide glucan content, and is an antioxidant, reduces cholesterol, triglycerides, and LDL-lipoproteins and increases HDL. Cosmetic compounds containing an extract of date kernels are used to slow down skin degeneration because of anti-ageing properties, and to prevent or treat cutaneous atrophy; in addition, they act as an aphrodisiac and tonic, and treat bruises and headaches. Fruits are used as a detersive (having a cleansing power) and are astringent in intestinal troubles. The roasted seed powder is also used as a substitute for coffee and for diabetes.

- **Other uses**: The fruits are used in food and drinks. Seeds are a substitute for coffee. The fruits' sap is used as a drink or in distillations in the alcohol industry, leaves have different purposes, and the wood is highly valued in construction.
- **Caution**: No reports.

Another cultivar

- **Arabic name**: Yansoon, Anisoon, Camoon hiliow.
- **Scientific name**: *Pimpinella anisum* L.
- **Common name**: Anis, Anise
- **Family name**: Umbelliferae / Apiaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Fruits and aromatic oil.
- **Chemical constituents**: Essential oil in the fruits that contains flavones and kenone, and the major component is trans-anethole (78% to 95%). In addition, pinene, limonene, safrol and myristicin are also present.
- **Pharmacological action**: It is aromatic with a strong liquorice flavour. The oil and seeds are expectorants, antiseptic, antioxidant, antimicrobial, diuretic, spasmolytic, stomachic, parasiticide, aphrodisiac, carminative, analgesic, appetitic, digestive, and lactagogue. It is used for dry coughs, headaches, bronchitis, indigestion, post-partum pain, asthma, and for liver and gall disorders. Anise is used in many cough drugs and tablets alleviating throat pains and tonsillitis.
  Essential oils in tablets containing anise extract have a strong effect against halitosis. The volatiles of *P. anisum* were most effective against U251 (brain tumour cell line) and have significant antipyretic activity in rats. Its oil repels parasitic insects, and extracts or essential oils control insects for cereals and dried foods. P-

anisaldehyde may be useful as a lead compound for the development of new agents for the selective control of house dust mites, and in a composition for eliminating the off odour effused from feet.

In folk medicine, the seed oil is a laxative. Anethole increases lactific activity when nursing, is effective for period secretion, is strengthening to the testicle, is used for womb warnings, reduces coughs, pharynx inflammations, chest pains, and is useful for bronchiole asthma. It is also useful in the treatment of muscular aches and pains, and helps during coughs, colic, cramps, flatulence, indigestion, catarrh, and hangovers. It is also a general tonic for the circulatory system and the respiratory tract, and helps calm the nerves of tense and anxiety-ridden people. Its oil is used today as an ingredient in cough medicine and lozenges and is reported to have diuretic and diaphoretic properties. It significantly enhances absorption and cleans lice. It is a lactagogue, appetizer, and carminative useful for spasms, ascites, kidney and spleen diseases, flu, headaches, coughs, and tonsil inflammation. The oil is included in protections against hair bugs.

A tea made from ground anise seeds helps respiratory problems such as bronchitis by clearing mucus from the air passages. It is also believed to promote milk production in nursing mothers. The seeds contain photanethole that is similar to the female hormone estrogen, and helps relieve the discomfort of the menopause.

- **Other uses**: Its leaves are used in soups, sauces and salads, the oil is used for flavouring, and the seeds are used for seasoning cakes, bread, and cookies. Anise oil is used in liquids, tooth and mouth pastes. Anise tea is an excitant and digestive. Fruit powder is added to some food materials such as falafel to hide certain odours and/or tastes. The oil is a parasitic insect repellent, and plant extracts and aromatic oils are used against insects to control the growth of grain seeds and food materials; anisaldehyde is used as a main compound in developing new selective materials to control house seed moths.
- **Caution**: The essential oil contains estragole 400-1050 ppm 1H, the fruit (seed) contains furocoumarins traces, and the anise oil contains alkenylbenzenes (estragole 1-5%).

- **Arabic name**: Snober Brutia
- **Scientific name**: *Pinus brutia* Ten.
- **Common name**: Turkish Red Pine
- **Family name**: Pinaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Buds, stem wood, roots, leafy branches, and resin.
- **Chemical constituents**: Volatile aromatic oil is distilled from leafy branches and contains 65% alpha-pinene. Resin from stem wood and roots contain phenolic compounds, organic derivatives, organic acids and resins, turpentine, kempferin, tannic acid and borneol. Pine buds contain 2-4% aromatic volatile oil made from terpenic coals, the most important of which are phellandrene, pinene and di-pentine. Turpentine oil is obtained from the distillation of crude resin oil from tree stems, and branches and roots contain phenolic compounds, organic derivatives, organic and resinic acids, resin, turpentine, kempferin, tannic acid and biorinol.
- **Pharmacological action**: The buds have balsamic properties, and are diuretic and diaphoretic. Their infusion is used in forms of drink for chronic respiratory system diseases and colds. Essential oil baths are useful for ceasing nerve disorders, foot sores and rheumatic pains. The oil vapour is antiseptic and useful for respiratory tract inflammations. Turpentine oil is rarely used as an expectorant and is involved in the structure of ointments used for skin redness. Plant tar in the form of capsules is used to regulate respiratory tract secretions, and in skin ointment formulations and disinfectants to cure chronic eczema disease. The tar has an antibacterial effect. The crude extracts of tar obtained from the roots and stems have antimicrobial properties.
- **Other uses**: The wood of many species has been used for structural lumber, the production of paper and related products, such as fuelwood, posts, poles and myriad other products. Pine provides a wide range of beneficial non-wood products including essential oils, resin, and fragrant and attractive foliage. It is an ornamental plant, decorative object, and its seeds are edible and a source of flavourings and medicinal products.
- **Caution**: The plant is known to cause problems in animals. The leaves are sharp, and those of certain species cause abortion in animals and lead to uncontrolled urination, bleeding and meagreness.

- **Arabic name**: Snober Halapi, Lizab
- **Scientific name**: *Pinus halepensis* Mill.
- **Common name**: Aleppo Pine, Fir
- **Family name**: Pinaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Turpentine and resin. Turpentine is a fluid obtained from the distillation of resin from trees. leaves and buds.
- **Chemical constituents**: Essential oil in leaves contains pinene, borneol, half-terpenes, cadinene, limonene, borneol acetate, gul-phenyl ethyl, and vitamin. Terpenes, mainly the monoterpenes alpha-pinene and beta-pinene, turpentine, fatty acids include linoleic, oleic and palmitic, phenols and flavonoids in needles and volatile terpenoids. Buds contain essential oil, bitter materials, starch and tannins. In addition, resin, kempferin and tannic acid are present.
- **Pharmacological action**: Turpentine oil is used for wounds, sores, burns, boils, lice, as a chest rub, nasal flow and for throat ailments. It is also used in the treatment of intestinal parasites and has an antiseptic, antifungal, anti-inflammatory and anthelmintic effect that kills tape and ringworms. It is a rubefacient, irritant, counter-irritant, feeble anaesthetic and vesicant. As a liniment, it is used for myalgia, bronchitis and pleurisy. Internally, it affects the central nervous system, stimulates respiratory and urine tract secretions, and is depurative and diuretic. It cures sprains, gonorrhoea, jaundice and nephritis. It is a valuable remedy in the treatment of kidney and bladder complaints and as a steam bath for rheumatic swellings and affections. It is beneficial for the respiratory system and for the treatment of mucous membranes, coughs, colds, influenza and tuberculosis.

  Its extract is a rubefacient, diuretic, irritant, and remedy for bladder, kidney, rheumatic affections and respiratory complaints, and externally it is used in plasters and inhalants.

  Pine is valuable for the lungs and throat. Its oil has antifungal and antiseptic effects and is used in massages for stressed muscles and joints. The leaves are antiscorbutic and used in baths. The attar is of a nice smell, is anti-mould, an air purifier and antiseptic, and is used in the soap industry as a fragrant.
- **Other uses**: Pine trees are used for hunting nets, tannin is used for hair dye, and it is a flexible wood. It has also been used for tanning, ship construction and timber. It is also used in the paper industry, for cellulose

and derivatives and peeled wood. Young male cones and mature seeds are used raw or mixed with some sweets. Its essential oil has an acaricidal activity. It is used for abrasions. Turpentine oil is internally used for horses and cattle as a vermifuge.

- **Caution**: Turpentine is an organic solvent; its vapour is a skin and eye irritant, it damages lungs and the respiratory system as well as the central nervous system when inhaled, and causes renal failure when ingested, as well as uncontrolled urination, and is combustible and a fire hazard. It is known to cause problems in animals. Turpentine perfume in large quantities harms the kidneys. Its leaves are sharp, and the leaves of certain species cause abortion in animals and lead to uncontrolled urination, bleeding and meagreness.

- **Arabic name**: Snober Muthmer
- **Scientific name**: *Pinus pinea* L.
- **Common name**: The Stone Pine, Shelled European Pine Nuts
- **Family name**: Pinaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Seeds and buds.

Cone

Nuts

- **Chemical constituents**: Turpentine oil is obtainable from the distillation of crude resin oil from the tree stem and branches.
- **Pharmacological action**: The seeds are nutritive and tonic. Turpentine oil is depurative, cures backache, is an aphrodisiac, analgesic, and anthelmintic, removes intestinal colic, and cures bladder ulcers. Seed poultices cure back problems and sciatica. The intake of seeds is cathartic, antipyretic, and a remedy for haematuria. Rubbing in the seed decoction disinfects wounds and enhances healing. Buds have useful balsamic properties, and are diuretic and diaphoretic. Their decoction is a drink used for chronic respiratory diseases and in cold feelings.
- **Other uses**: The seeds are edible, and a source of flavours and medicinal products. The wood of different species is used in carpentry, the paper industry and related products. Its wood is also used as a fuel. Pine provides different products other than wood, including resin and fragrance. The plant is of a nice vegetative growth, and is an ornamental tree in gardens and streets and is also used in decorations.
- **Caution**: Its leaves are stiff and sharp, and in some species cause animal abortions and result in uncontrolled urination and excessive bleeding, and those that remain alive are meagre.

- **Arabic name**: Snober
- **Scientific name**: *Pinus sylvestris* L.
- **Common name**: Scots Pine, Blue Mallow
- **Family name**: Pinaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Buds, stem wood, roots, leafy branches, and plant tar.
- **Chemical constituents**: The aromatic oil obtained from leafy twigs contains a high level of alpha-pinene (65%). Stem and root wood tar contain phenolic compounds, organic derivatives, organic acids, resins, turpentine, kempferin, tannic acid and borneol. In addition, aromatic oil (0.2-1%) is obtained from pine buds and made from coal terpenes of phellandrene, pinene and dipentene. Turpentine oil is obtained from the crude resin oil of the stem and branches.
- **Pharmacological action**: The plant is used for bronchitis, mouth inflammations, pharyngitis, hypertension and colds. Pine is useful for chest diseases and permanent diseases of the respiratory system. Buds are balsamic, diuretic, and diaphoretic, and their decoction is used for respiratory system ailments and colds. The plant is an antioxidant, a radical scavenger and anti-tussive; it cures toothache, gingival abscesses, stomach aches and abdominal pain in children. It is an emollient, expectorant, anti-inflammatory, astringent, tonic, laxative and protects intestinal mucosa. It is effective for colds, constipation, and gastrointestinal pains.
  An aromatic oil bath is useful for nerve disorders, feet sores and rheumatic pain. The oil vapour is antiseptic and useful for bronchitis, and turpentine oil is used as a skin ointment for eczema.
  Tar in the form of capsules is useful in regulating lung secretions and as an antiseptic skin ointment for chronic eczema. Perfume can be obtained from the needles, young twigs and cones of the pine tree. It stimulates, refreshes and cleanses, and has a strong, fresh, resinous aroma; it has a powerful antiseptic quality and is a deodorant.
- **Other uses**: The seeds are edible, and pine is included in different foods, sweets and nutritives. The plant is regarded as a wild flower and forestry tree.
- **Caution**: The plant is known to cause problems in animals. Its oil may cause skin irritation. It is rarely used internally since it burns and harms the kidneys. Leaves are sharp and those of certain species cause abortion in animals, as well as a state of losing the ability to control urination, severe bleeding and meagreness.

- **Arabic name**: Fustuk Halapi
- **Scientific name**: *Pistacia vera* L.
- **Common name**: Pistachio
- **Family name**: Anacardiaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Bark, fruits, and seeds.
- **Chemical constituents**: In the seeds are fixed oil (54-60%), protein (17-22%), carbohydrates (16%), sugars, fibres (1.4%), ash (2.3%), water (5.9%), mineral elements (2.7%), tannins, fatty acids, starch and vitamins. Essential oil's main compounds include hydrocarbon monoterpenes, oxygenated monoterpenes and diterpenes. The major constituents are limonene (35.1%), trans-verbenol (3.0%), camphene (1.4%), trans-pinocarveol (about 1.20%), □-pinene (28.7%) and □-terpinolene (21.1%). The major component of the phenolics is gallic acid (79-82%). The plant contains fatty acid.
- **Pharmacological action**: The plant is used for diarrhoea and in cosmetics. Its oil is used in food, and the seeds are rich in salts, especially phosphorus. Tannins are present in the leaves and the plant produces resin for chewing gum. The young fruit hull is antiemetic. Pistachio oil is a general remedy and skin cleansing and anodyne; the fruits are nutritious and the seeds are sedative, a nerve tonic and a blood regenerative. They cure coughs and spleen, kidney and liver diseases, including jaundice. Antioxidants and the total phenolic compounds of pistachio hull extracts have similar properties. Burned seed hulls dissolve gravel, strengthen gums and cure mouth ulcers. Rubbing the tree bark or its decoction on the head kills lice. The phenolic compounds in the bark are antioxidants. Its oil is used to wash scarfskin cells in folk medicine.
- **Other uses**: The toxicity of essential oil vapours is passed from *Pistacia* spp. to the granary weevil and *Sitophilus granarius*. Seed residues are used as animal feed after being extracted.
- **Caution**: No reports.

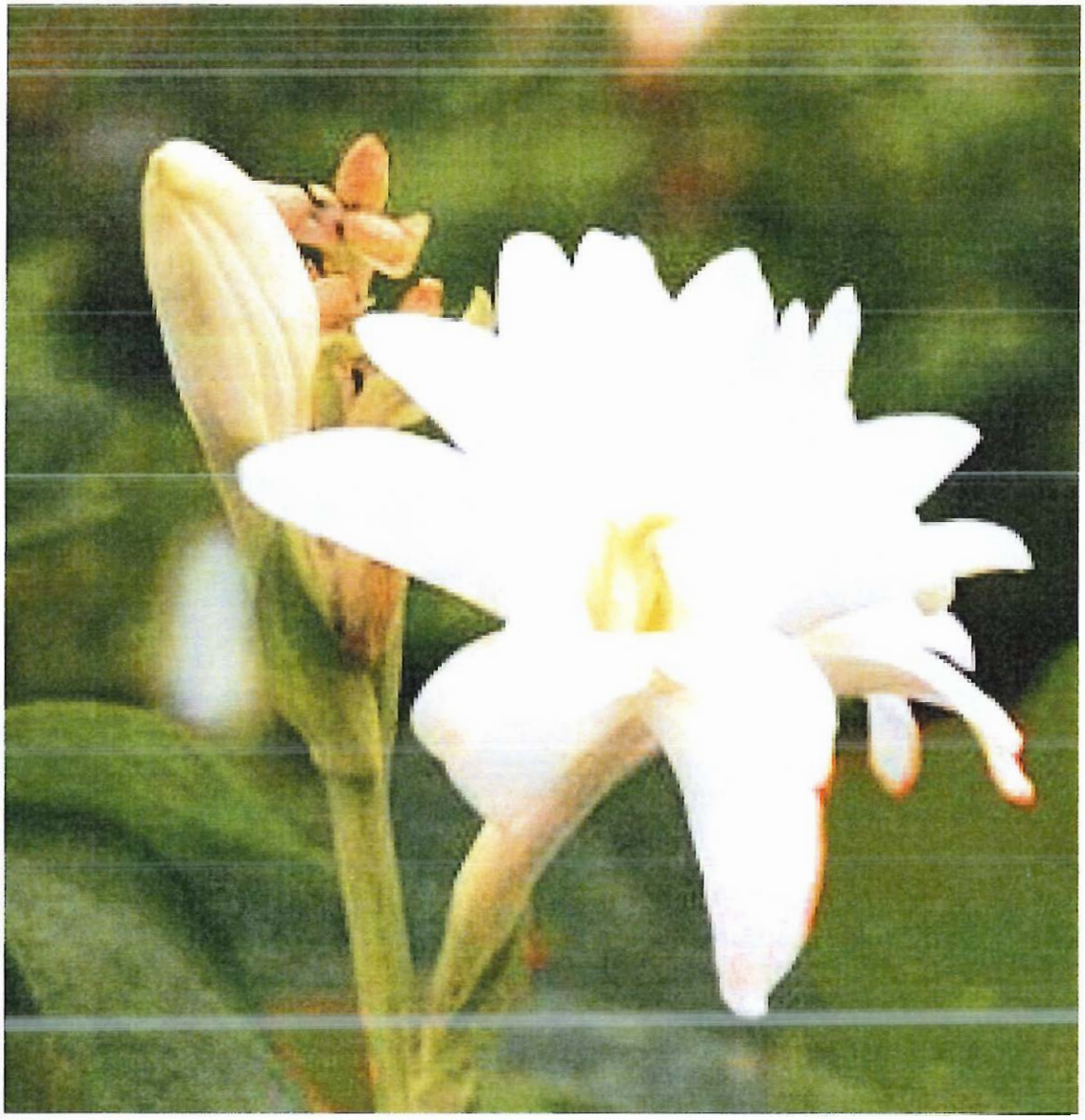
- **Arabic name**: Bazaila
- **Scientific name**: *Pisum sativum* L.
- **Common name**: Garden Pea, Green Pea, Smooth Peas, Field Peas
- **Family name**: Leguminosae / Fabaceae
- **Growth habit**: A viney herb
- **Life cycle**: Annual
- **Part/s used**: Seeds, leaves, and stem.
- **Chemical constituents**: Protein lacks methionine but contains more lysine, fat, carbohydrate, fibre, and ash; minerals include calcium, phosphorus, iron, sodium, magnesium, zinc, manganese, and potassium. It contains vitamins including thiamine (B1), riboflavin (B2), niacin, vitamin K, vitamin B6, folates and vitamin C and reasonable amounts of vitamin E and beta-carotene (provitamin A). Raw peas contain carbohydrates including a few saccharose and dietary fibre. Fruits and seeds contain starch, albuminoids, alkaloids, galactolipids, trigonelline, piplartine and essential oils. Petiole and tendril yielded kaempferol-3-triglucoside, quercetin-3-triglucoside, and their p-coumaric esters. Ellagic acid and β-sitosterol. Peas' non-nutritive biologically active components include alkaloids, flavonoids, glycosides, isoflavones, phenols, phytosterols, phytic acid, protease inhibitors, saponins, and tannins. This plant is rich in apigenin, hydroxybenzoic, hydroxycinnamic, luteolin, and quercetin.
- **Pharmacological action**: Traditionally, the seeds are used as a nutrient, appetizer, refrigerant, laxative, and astringent and treat wrinkled skin. They have contraceptive, fungistatic and spermicidal activity. Seeds treat diabetes, acne, phlegm and intestinal inflammation. They possess antioxidant, antimicrobial and hypoglycaemic activities. Pods' pericarp showed anti-hyperglycaemic activity. The plant is traditionally used for diabetes, heart diseases and as a blood purifier. Dried and powdered seeds are used as a poultice for skin complaints including acne. The seed oil has shown promising effects in preventing pregnancy by interfering with progesterone. It inhibits endometrial development, and reduces both pregnancy rates in women and the male sperm count. The oil is very beneficial to pregnant and lactating women, due to its richness in folates and other essential vitamins. It is also used in regulating blood sugar levels, and in preventing heart diseases.
  Peas fight nervous system disorders, prevent neural tube and digestive defects, enhance immunity, prevent cancer, help with weight loss and improve hair health. Ethanol extracts showed anti-hyperglycemic and antioxidant activities in mice.
  Peas are important components of the human diet. The seed coating and cell walls' cotyledon fibre contribute to the gastrointestinal function and health, and reduce the digestibility of starch in peas. Amylose content of pea starch contributes to its lower glycaemic index and reduces starch digestibility. Hydrolysed pea protein

may yield peptides with bioactivities, including angiotensin I-converting enzyme inhibitor activity and antioxidant activity. The vitamin and mineral contents of peas may play important roles in the prevention of deficiency-related diseases, specifically those related to deficiencies of selenium or folate. Peas contain a variety of phytochemicals. These include polyphenolics. Coloured seed coat types in particular may have antioxidant and anti-carcinogenic activity, saponins which may exhibit hypocholesterolemic and anti-carcinogenic activity, and galactose oligosaccharides which may exert beneficial prebiotic effects in the large intestine. *Pisum sativum* has been shown to possess antibacterial, anti-diabetic, antifungal, anti-inflammatory, and anti-hypercholesterolemic effects, and has also shown anticancer activity. Peas' chemicals have been reported to contribute to their remedial properties, including anti-carcinogenesis.

- **Other uses**: It is a food crop, and the leaves, young shoots and seedpods are cooked and used as a potherb in salads, as a fresh or cooked vegetable and as a salad vegetable. Dried, roasted seeds are steeped and used as a coffee substitute, and are also used raw, cooked and sprouted as a vegetable. The mature seed can be dried and ground into a powder, then used to enrich the protein content of flour when making bread. Immature seedpods are eaten raw or cooked, are sweet and delicious, and can be added to salads or lightly cooked; immature seeds can be used similarly, being rich in protein, and can be cooked as a vegetable or added to soups or sprouted and added to salads and soups. Polypeptides have been isolated from peas that are toxic to pests of stored grains.
- **Caution**: Toxicity may result from the accumulation of heavy metals (such as cadmium, lead, arsenate, selenium and others) in the plant and this will consequently have effects on human health.

- **Arabic name**: Yasmin Azraq
- **Scientific name**: *Plumbago auriculata* Lam
- **Common name**: Blue Plumbago, Cape Plumbago, Cape Leadwort
- **Family name**: Plumbaginaceae
- **Growth habit**: Herb or small shrub
- **Life cycle**: Perennial
- **Part/s used**: Leaves, flowers, roots, and root sap.
- **Chemical constituents**: Plumbagin, a hydroxylnaphthoquinone (5-hydroxy-2-methyl-1, 4-naphthoquinone). The naphthoquinones and plumbagin (2 methyl, juglone) are found in all plant parts as well as epi-isoshinanolone, the steroids sitosterol and 3-0 glucosylsitosterol, plumbagic and palmiitic acids. Flowers contain azalein, capensinidin, and capensinidin-3-rhamnoside. In the leaves are apigenin, luteolin and their glycosides. Root methanolic extract yielded amyrin acetate, plumbagin, α-amyrin, β–sitosterol, diomuscinone, capensisone, isoshinanolone and β–sitosterol–β-glucopyranoside, isoshinanolone and diomuscinone. Capensisone was also detected in the plant. Extracts showed the presence of steroidal and phenolic bands.
- **Pharmacological action**: The plant is used in cases of lead poisoning and as a phytoremediator for lead and cadmium. It has anti-bacterial and anti-inflammatory activities, while crude protein in young leaves has anti-fungal activity. The plant exhibits antioxidant, anti-ulcer and gastro-protective activities, possesses larvicidal activity against fourth instar larvae of *Aedes aegypti*, and the plumbagin showed excellent toxicity with LC50 of 1.26 and 5.43 μg/mL. Plumbagin inhibits chitin synthetase and has many antimicrobial, dermatological and cytological activities against protozoan parasites. The roots have anti-leishmanial activity.
  In folk medicine, the plant has been used for wounds, broken bones, and warts, and powdered roots are used as a snuff for headaches. Aerial parts or a root decoction is used for blackwater fever and the root infusion is an emetic. The powdered, roasted root is rubbed into scarification over fractures to promote healing, and on the body to cure stitches.
- **Other uses**: It is widely grown as an ornamental aromatic plant with beautiful blue flowers in gardens. The plant is used as a hedge or live fence. Flowers and leaves are used as a dye for textiles. The grey-blue root sap is used for tattoos. The root juice can be consumed. It is most common in lead-polluted areas, hence it is useful as a lead or cadmium controlling agent by means of phytostabilization.
- **Caution**: No reports.

- **Arabic name**: Fittna
- **Scientific name**: *Plumeria obtusa* L.
- **Common name**: Temple Tree
- **Family name**: Apocynaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Leaves, stem bark, flowers, and latex.
- **Chemical constituents**: Triterpenoids, iridoids including 6''-O-acetylplumieride-p-E-coumarate, 6''-0-acetylplumieride-p-Z-coumarate, plumieride, plumieride p-Z-coumarate, and pantoprazole, aromatic oil rich in benzyl salicylate and benzyl benzoate and low concentrations of alkanoic acids.
- **Pharmacological action**: The plant is an antioxidant used for intestinal ulcers. Stem bark extract reduces stomach acidity and its secretions, is antiseptic and cathartic, helps with skin scratching or itching, and is a remedy for bronchitis, coughs, asthma, bleeding haemorrhoids, fever, gonorrhoea, dysentery, tumours and blood disorders. The bark is diuretic and the latex is cathartic, antimicrobial, and tissue restorative. Macerated bark is antihypertensive, and the plant has insecticidal effects.
- **Other uses**: It is widely grown as an ornamental aromatic plant with beautiful flowers.
- **Caution**: No reports.



- **Arabic name**: Misk Al-Room, Zanbaq Al-Wadi, Zanbaq Baladi Darani, Zanbaq Tarabulsi
- **Scientific name**: *Polianthes tuberosa* L.
- **Common name**: Tuberose
- **Family name**: Asparagaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: The extracted oil from fresh flowers picked before the petals open, bulbs, and oil.
- **Chemical constituents**: Polyamines, cholestane glycoside, spirostanol, furostanol glycosides, menthyl benzoate, menthyl anthranilate, benzyl alcohol, butyric acid, eugenol, farnesol and geraniol. Spirostanol saponins with monosaccharides, anthocyanin, steroidal glycosides (hecogenin and tigogenin), polyfructozan from bulbs, transfer-ectocidase enzyme and steroidal saponin. Polysaccharides, indole kaempferol, kaempferol-3-O-xyloside, and kaempferol-3,4'-O-dixyloside, □-lactones, steroidal saponins, steroids, sapogenins and glucofructosan. Oil, acid, ester, nerol (in the free state and as acetic, and probably also propionic, esters), and leucorine alkaloid in bulbs.
- **Pharmacological action**: Aromatic flowers are used as a stimulant, sedative, laxative and in the preparation of drinks with chocolate, served cool or hot as required. The plant oil is one of a high quality perfume of strong odour and is involved in the manufacturing of many aromatic compounds. The plant-derived molluscicides singly, and in binary combinations with other herbal molluscicides and the extracted acetogenins, caused a significant reduction in the fecundity, hatchability, and survival of young snails.

Anticancer agents containing acidic heteropolysaccharides are in the plant. Tuberose polysaccharide is a very useful raw material for skincare cosmetics. Acidic heteropolysaccharides are used as an immunosuppressant for dermatitis, abdominal pain, abscess, acne, addictions, anal fissures, athlete's foot, moisturizing, antiaging and wrinkle- or rough skin-preventing cosmetics containing acidic heteropolysaccharides and plant extracts. Bulbs are diuretic, purgative, placed on red boils in children and as a powder as a cure from edema.

- **Other uses**: Soaps smoothing the skin are made from the plant, and cosmetics showing excellent skin biocompatibility contain fluorosilicones and heteropolysaccharides.
- **Caution**: The plant is known to cause problems in animals. Its ingestion may result in some minor symptoms such as rashes, vomiting or diarrhoea, but small amounts may not cause any symptoms.

- **Arabic name**: Hoor Abyad
- **Scientific name**: *Populus alba* L.
- **Common name**: White Poplar, Abele, Silver Poplar, Silver Leaf Poplar, Poplar
- **Family name**: Salicaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: The stem bark and young leafy buds.
- **Chemical constituents**: Essential volatile oil, tannins, flavone glycosides, salicin, populin, resin, glycoside, and benzol. Bark and buds are rich in unulin glycoside, populin glycoside, hyopopulin and salicylates. Populin glycoside and hypopopulin are present in *P. nigrum* and resin is in *P. balsamifera*, which is also named balsam poplar. Flower buds in certain species contain salicin glycoside and salicin benzyl. Unulin glycoside is rich in the bark and buds.
- **Pharmacological action**: It is anti-rheumatic, anti-inflammatory, antiseptic, astringent, tonic and anodyne. A plant infusion is used for infections of the upper respiratory tract, gout, lower back pains, urinary system ailments, indigestion, liver disorders, debility, and anorexia, and to alleviate fever, menstruation and rheumatic pains. The fruits are cholagogue, and diuretics are used for strangury, are anti-rheumatic, and cure cystitis and nephritis.
  The stem bark decoction or infusion is diuretic, anthelmintic, anti-fever and tonic. It contains salicylates, from which the proprietary medicine aspirin is derived. Externally, it is used as an ointment or a poultice for wounds, skin exanthema, rheumatic joints (arthritis), chilblains, haemorrhoids, infected wounds and sprains.
  The leaves are used in the treatment of caries of teeth and bones. The twigs are depurative. A leaves decoction is anti-conceptive and a stomach tonic. Buds are used in the preparation of ointment for haemorrhoids, and its infusion and extracts are used for rheumatism, arthritis and cystitis.
  A medical coal made from the wood of small branches is carminative and relieves flatulence. *Populus* fruits were used before to cure rheumatism, kidney and cystitis, and as a diuretic.
  In folk medicine, a leaves decoction prevents conception if drunk after the renewal of the monthly cycle for 3 days. Fruits open clogging and are useful in urine strangury.
- **Other uses**: It is a street tree.
- **Caution**: No reports.

- **Arabic name**: Hoor Furati
- **Scientific name**: *Populus euphratica* Oliver
- **Common name**: Poplar, Aspen Willow
- **Family name**: Salicaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Bark and closed leafy buds.
- **Chemical constituents**: Populin glycoside, hyopopulin in black poplar, and resin in the species *populous balsamifera* named balsam poplar. Flower buds contain essential oil, tannins and organic acids.
- **Pharmacological action**: The bark is tonic, anthelmintic and anti-fever. A medical coal made from the wood of small branches is carminative and anti-flatulence. A bud maceration is used for bronchitis, arthritis, rheumatism and pneumonia. It is a febrifuge, diuretic, stimulant and an anti-rheumatic.
  A bud tincture is antipyretic and anti-rheumatic, and is externally used as an ointment for skin diseases such as scabies, burns, sores and arthritis. Young leaves and buds are important in baths as sedative agents. The plant is an air antiseptic. A humulin substance isolated from buds is used in astringent and antiseptic liniments.
- **Other uses**: It is a forest species and grows along water streams. The oil is used in cosmetics and soap manufacturing.
- **Caution**: No reports.

- **Arabic name**: Hoor Aswad
- **Scientific name**: *Populus nigra* L.
- **Common name**: Poplar
- **Family name**: Salicaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Bark, buds
- **Chemical constituents**: Essential volatile oil in flowering buds, populin, salicin glycoside, salicin benzol, unulin glycoside in bark and buds.
  Populin, hyopopulin and balsam poplar resin are present in certain species.
- **Pharmacological action**: The bark is used as a tonic, anthelmintic, and antipyretic. A medical coal is made from the wood of young branches and used as a carminative and for flatulence. In folk medicine, its fruits were used for rheumatism, nephritis, and cystitis and as a diuretic. A leaves decoction is anti-conceptive if drunk for three days directly after menstruation. It is a stomach tonic. The fruits induce bile secretions and their intake is useful for strangury.
- **Other uses**: It is a forest and ornamental tree on streets and in gardens.
- **Caution**: No reports.

Populus nigra trees

- **Arabic name**: Mishmish
- **Scientific name**: *Prunus armeniaca* L.
- **Common name**: Apricot, Armenian Plum
- **Family name**: Rosaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Fruit and seed oils.
- **Chemical constituents**: Vitamins A, B, C and BB, sugar, pro-carotene, fat materials, starch and different mineral salts. Bitter seeds are known to contain 120-4000 mg HCN/Kg per seed, and also contain cyanogenic glucoside (amygdalin 6.5%).
- **Pharmacological action**: The fruits are used for scratches, burning, thirst, fevers, enhancing bile and as a laxative. Seed oil is useful for haemorrhoids and anaemia, and as a nutritive and stimulant. It is a nerve tonic, sedative, emollient, cleansing, anti-diarrhoeal and skin purifier.
  In folk medicine, the seed oil is rich in iron and is needed in blood haemoglobin. It prevents hair drying, is a nutritive, tonic, stimulant, and laxative, is used by pregnant and nursing women as a laxative.
- **Other uses**: It is a fruit tree plant. The fruits are eaten fresh or dry and made into juices and jams, and are dried in different forms.
- **Caution**: The seeds of wild apricot taste bitter and contain deadly toxic prussic oil.

Flowering plant

- **Arabic name**: Khooch, Parqooq
- **Scientific name**: *Prunus domestica* L.
- **Common name**: Common Plum
- **Family name**: Rosaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Fruits, leaves, flowers, and bark.
- **Chemical constituents**: Sugars (17.63%), vitamins A, B and C, mineral elements, starch (0.81%), and organic acids.
- **Pharmacological action**: The plant is nutritive, emollient, sedative, dissolves gravel, diuretic, a mild laxative, detoxicant, anti-acidic, excitant, nerve restorative and removes liver congestion. It is used in cases of anaemia, arteriosclerosis, constipation, and liver debilities. Dry plum is beneficial for nephritis, rheumatism, gout, and arteriosclerosis. The juice cures fevers and alleviates thirst and vomiting. It enhances sexuality. A decoction of leaves is an anthelmintic and the infusion is a purifier. Wild plum fruits are astringent for blood vessels and are therefore used for wounds and bleeding, and are also beneficial for diarrhoea and enuresis. The bark powder of wild species is used for cleaning teeth, as an astringent and to alleviate temperature.
- **Other uses**: The oil isolated from seeds is edible. The plant is a fruit tree.
- **Caution**: No reports.

- **Arabic name**: Durraq
- **Scientific name**: *Prunus persica* (L.) Batsch
- **Common name**: Peach
- **Family name**: Rosaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Fruits
- **Chemical constituents**: Sugars (4.5%), carbohydrates (7%), vitamins A and C, minerals, pectin, organic acids (1%) including phenolic, citric and maleic, starch (0.5%), cellulose (6%), and vitamins B, B_1, B_2, C, and PP. Seeds are known to contain prunasin corresponding to 470 mg HCN/Kg.
- **Pharmacological action**: The fruits are used for urinary salts, haematuria and dyspepsia. Fruit juice is anti-thirst, a bile stimulant and a sex tonic. A flower infusion is a laxative for children. A poultice of leaves removes secundines. Peach is a nerve and intestine tonic, and is beneficial for the hair and skin, stimulates liver and intestine functions and helps with constipation. It is diuretic and beneficial against kidney and bladder stones. It maintains blood alkalinity and is a digestive. A flower and leaf decoction is a tranquillizer and an intestinal excitant at the same time.
- **Other uses**: Its fruits are consumed in fruit salads, jams, drinks and dry. The seed oil is edible and tasty. It is a component in cosmetics, and extracted seed residues and fibres are used as animal fodder.
- **Caution**: An excessive intake of the fruits may cause intestinal disorders. Labourers collecting fruits may suffer scratches to the hands because of the mould that spreads on the fruit peel. Persons with stomach ulcers or enteritis are advised not to ingest large quantities. Peaches are difficult to eat for patients of pharyngitis, laryngitis, gastroenteritis, tonsillitis and gingivitis.

Fruits

- **Arabic name**: Guava
- **Scientific name**: *Psidium guava* L.
- **Common name**: Guava
- **Family name**: Myrtaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Fruits and leaves.
- **Chemical constituents**: Guava fruits contain sugar (17%), fats, proteins, large amounts of vitamins A and C, and vitamins B, B_2 and niacin are also present. In addition, it contains salts of calcium, iron, and phosphorus while immature fruits contain tannic acid and solanine.
- **Pharmacological action**: Because of their low sugar content, the fruits may be useful food for diabetics. The fruits are antioxidant; guava is also a source of lectin that can be explored to prevent the adhesion of *E. coli* to intestinal epithelial cells. Fruits are antiscorbutic and anti-diarrhoeal. A leaf decoction is anti-tussive and used for colds, and the tree bark contains astringent material useful for cures, especially in children.
- **Other uses**: It is a fruit tree, and its ripe fruits are edible and are used in pastries, gelatins and preserved food. The fruits are dried, powdered and added to jams to improve their substrata.
- **Caution**: Immature fruits may be harmful and cause toxicity since they contain the glycoalkaloid solanine.

- **Arabic name**: Rom'man
- **Scientific name**: *Punica granatum* L.
- **Common name**: Pomegranate, Dadima
- **Family name**: Punicaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: The whole plant, flowers, fruit, seeds, bark, stem, and root.
- **Chemical constituents:** Polyphenols, ellagic acid in its free and bound forms (as ellagitannins, and EA-glycosides), gallotannins, anthocyanins and other flavonoids and collagen fibre.
  Granatin A and B, punicacortein A, B, C and D, 5-O-galloylpunicacortein D, punicafolin, punigluconin, punicalagin, 1-alpha-O-galloylpunicalagin, punicalin and 2-O-galloyl-punicalin. Other phenolics include catechins, gallocatechins, and anthocyanins, such as prodelphinidins, delphinidin, cyanidin, and pelargonidin. Polyphenols, flavonoids, and hydrolyzable tannins.
  Fruit husk contains 25-28% tannins of which the most important is ellagitannin, ellagic acid, unquantified amounts of punicalin (known as granatin D), punicalagin (known as granatin C) and EA-glycosides (hexoside, rhamnoside and pentoside). It also contains granatins A and B. In root and stem peels there are tannins (20-25%), and the most important compounds of this group are cauarin, punicalagin and punicacarotene. In addition, peels contain pyperinoid compounds (0.4% in stem cortex, 0.8% in root bark) of which the most important is isopelletierine. Gallic acid and catechin are in fruit peel, as well as pyridinium alkaloid.
  Seeds contain sugars, citric acid, water (84%), proteins, tannins, bitters, vitamins A, B and C, minerals including phosphorus, potassium, calcium, manganese, iron, sulfur, fats and a volatile alkaloid liquid known as pilisin.
  Fruit juice contains sugar, acids at different percentages according to the cultivar, vitamin C, the pelletierine alkaloid known as punicine, ethyl pelletierine and pseudo-pelletierine (methylgrantanine).
- **Pharmacological action**: The plant is used to cure dysmenorrhoea, haemorrhoids, sore throats and stomatitis. It has anthelmintic (fruit peel decoction), diuretic, antiseptic, estrogenic, taenifuge, haemostatic, hepatic, ophthalmic and stomachic activities. It is a cure for bronchitis, cancer, conjunctivitis, bleeding, burns,

diarrhoea (fruit peel), jaundice, impotence, skin rashes, vision, ulcers, weak stomach and acidity, gastrointestinal diseases, scalp, dysentery, and hair care. Pomegranate is beneficial for chest ailments, throat roughness, cures piles, coughs, cardiac aches, anaemia, and kidney stones, and helps with dissolving fats. It prevents vomiting and its extract restores sight, improves and reconciles the voice, is useful for toothache, pharyngitis, and throat catarrh, and purifies the blood and palpitations. Pelletierine tannate is the material that kills cylindrical worms and the pilisin in the seeds repels tapeworms. Pomegranate cleans respiratory tracts, and is a blood disinfectant and digestive. It is a liver tonic, cures exanthema ulcers, conjunctivitis and is used for hair and head care. The fruit peel is a wound healer, the fruit extract possesses strong antioxidant, anti-atherosclerotic and anti-inflammatory properties, and the fruit's juice improves lipid levels in diabetics and their blood concentrations. It cures prostate cancer and punicalagin and extracts clean free radicals.

Its seed oil has been reported to suppress chemically-induced colon carcinogenesis in rats, and inhibits colon cancer resulting from chemical treatments in rats. Punicalagin and its extract are antioxidants and radical scavengers. The oil stimulates collagen production and cell restoration, reduces wrinkles and promotes skin flexibility. Fermented juice and pericarp extracts prevent and suppress cancer. Punicalagin is a hydrolysable tannin commonly found in pomegranate and was also reported to demonstrate antibacterial activity against *Salmonella thyphimurium*.

Cosmetic compositions containing fruit extract are used as antioxidants, improve skin elasticity, have a preventing and improving effect on ageing, provide excellent action on cell proliferation, and collagen and hyaluronic acid synthesis permits the enlargement of breasts, elevation of flabbiness and reduces skin ageing and dryness. It is included in hair-growing compositions or health-care products for lowering blood lipid levels and also for preventing and treating hyper lipidemia-induced diseases. A peel decoction is a remedy for scabies.

A pericarp infusion compound is used for improving oral hygiene and contains an extract capable of removing plaque, and is used in the prevention and treatment of gingivitis and periodontal disease. The fruit might act against these diseases' proliferation and has metastatic potential.

The root and bark are used for worms and quench the thirst, and the juice is used against diarrhoea, piles and tuberculosis. Flower buds are bruised to relieve fevers and coughs, and stop nausea and vomiting. The rind is used as a tooth powder and for anal itching, strengthens the gums and is a traditional remedy against dysentery and intestinal parasites. Its dried seeds are astringent, stomachic, tonic, and anti-diarrhoeal, as well as being an appetizer, digestive, skin emollient and refrigerant for some fevers. The seeds and juice are considered a cardiac and throat tonic. The plant's branches are made into brooms for cleaning. The leaves are vermifuge and sometimes consumed as a vegetable. Pomegranate is anti-diarrhoeal, especially after mixing with opium, and expels uric acid that causes gout and destroys joints. It prevents rapid cardiac pulses, stimulates liver functions, and prevents jaundice and hepatitis. The flower's juice is astringent, the rind and tree bark prevent nosebleeds and bleeding gums, tone the skin, and firm up sagging breasts, and the juice of specific fruit strains is used for eye drops and as a contraceptive and abortifacient by means of consuming seeds, or rind, as well as by using the rind as a vaginal suppository.

In folk medicine, a mixture of 20% pomegranate oil as an active ingredient diluted in 80% paraffin oil boosts restoration, repairs the skin and helps in collagen production.

- **Other uses**: The fruit is used as a juice and sauce, and the tree bark is used in tanning and for dyes. Selected dyes are valuable for the dyeing of sheets and gowns for hospital use and on mattresses and upholstery. The dyes exhibit good wash fastness and an antibacterial effect, and therefore are likely to be durable. Fruit peel is used in a mixture with henna as black hair colouring; the plant is used as a table fruit, in timber and as fodder. Dried seeds are used in sauces, ice cream, fresh chutneys and syrups. The fruit and its juice are consumed.
- **Caution**: Tree bark, root bark and the root all contain toxicants. All pyridine alkaloids from the root/bark (0.5-0.7%), e.g. pelletierine, pseudo-pelletierine, iso-pelletierine and methylisopelletierine, are all of high concern. Iso-pelletierine is the most potent taenicide, and the fruit's hydroalcoholic extract is genotoxic *in vitro* and *in vivo*. Tannin is also available in different plant parts.

Fruiting tree

Pomegranate in Wadi Al'Al

- **Arabic name**: Zai'roor Nari
- **Scientific name**: *Pyracantha coccinea* M. Roem
- **Common name**: Firethorn
- **Family name**: Rosaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Leaves and fruits.
- **Chemical constituents**: Hydrogen cyanide (HCN) and the toxin maytansine. Extracts of pyracantha also contain chloroform, acetic ether, and petroleum ether, which can be toxic at high concentrations. Firethorn also contains flavonoids and proanthocyanidins including luteolin, luteolin-3', 7-diglucoside, apigenin, apigenin-7-O-glucoside and rutin.
- **Pharmacological action**: The extracts reduced blood coagulation time in mice. Hydrogen cyanide has been shown to stimulate respiration and improves digestion in small quantities; it could be beneficial in the treatment of cancer. It was used during wars. Maytansine showed anti-leukemic activity against the P388 lymphocytic leukaemia in mice and cytotoxicity against the KB cell culture derived from a human epidermoid carcinoma of the mouth. Patients suffering from acute lymphocytic leukaemia, breast carcinoma, ovarian cancer, thymoma, melanoma, and non-small scale lung cancer all responded to certain levels of maytansine, but the chemical causes severe pains.
  Flavonoids and proanthocyanidins are antioxidants, and apigenin inhibits the growth of breast carcinoma cells, human thyroid cancer cells, and human prostate tumours. Apgenin, as well as luteolin (another flavonoid), are more effective than commonly prescribed oral contraceptives (Ortho-Novum, Medicon and LO/OVRAL) in preventing pregnancy. Both are toxic to the methicillin-resistant bacteria *Staphylococcus aureus*.
- **Other uses**: It is an ornamental plant on roads and in gardens. Hydrogen cyanide is used in fumigating, electroplating, and mining, for producing synthetic fibres, plastic, dyes, and pesticides, and as an intermediate in chemical syntheses.
- **Caution**: It is a poisonous plant; the berries are the most toxic part, and could cause vomiting, stomach aches, blistering of the tongue, and diarrhoea upon ingestion. The sap of the plant could also cause skin rashes and irritation. Hydrogen cyanide (HCN) causes skin irritation and is found mostly in the berries and the leaves. Maytansine inhibits mitosis, interfering with the formation of microtubules, and thus prevents DNA, RNA, and protein synthesis, with the greatest effect being on DNA synthesis. Toxicity caused certain problems, such as gastrointestinal toxicity, chronic toxicity in many tissues, neurotoxicity, inflammation, and fibrosis.

- **Arabic name**: Kumathra, Ajass, Enjass
- **Scientific name**: *Pyrus communis* L.
- **Common name**: Pear
- **Family name**: Rosaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Fruits, leaves, flowers, and bark.
- **Chemical constituents**: Phenolic glucosides including arbutin (hydroquinone-β-D-glucopyranoside), quercetin, kaempferol, friedelin, sterols, isoquercitrin, ursolic acid, sorbitol, astragalin, phloridzin and tannins. The plant also contains minerals, protein (5%), fatty materials (4%), sugar (15.5%), fibres (1.5%), vitamins A, B, E, C and ascorbic acid. In the leaves are arbutin, isoquercitrin, sorbitol, ursolic acid, astragalin and tannin. The bark contains friedelin, epifriedelanol and beta-sitosterol. Phloridzin is present in the root bark. Flavonoid glycosides include quercetin 3-O-β-D glucopyranoside, kaempferol 3-O-β-D (6"-O-α-Lrhamnopyranosyl)-glucopyranoside and quercetin 3-O-β-D-(6"-O-α-L-rhamnopyranosyl)-glucopyranoside. Sterols and triterpenes (β-sitosterol and α-amyrin), phenolics and coumarins are also present. Chlorogenic acid is found in flowers and triterpenoids are found in the stem bark.
- **Pharmacological action**: Pear fruits are food for infants, and are used in cases of nutrient deficiency, anaemia, diarrhoea, and intestinal feebleness; they stimulate digestion secretions, are an intestinal activator and are depurative. Pear juice is recommended for suckling children at early ages. Arbutin is commonly used in urinary therapeutics and as a human skin whitening agent. It decreases melanin in the skin. Arbutin is an antibacterial, anti-inflammatory, antioxidant, analgesic, astringent and spasmolytic. Pear is used for diabetes because of its low sucrose content, known as amritphale, which has astringent and sedative activity and acts as a febrifuge. Leaves and bark are used for wounds and as an anti-inflammatory.
  In folk medicine, the leaves, buds, and bark are astringent remedies. Fruits are a rich source of vitamin C and antioxidants. They act against reactive oxygen species. The flowers of the common pear are used as components in analgesic and spasmolytic drugs.
- **Other uses**: Fresh ripe fruits are eaten raw or made into jam or sweets.
- **Caution**: No reports.

Roots

- **Arabic name**: Fijil
- **Scientific name**: *Raphanus sativus* L.
- **Common name**: Radish
- **Family name**: Cruciferae / Brassicaceae
- **Growth habit**: Herb
- **Life cycle**: Annual or Biennial
- **Part/s used**: Tuberous roots and seeds.
- **Chemical constituents**: Sugar, starch, proteins, vitamins B_1 and C, carotene, thioglycozenolates, mineral elements including calcium and iron, nitrogenous compounds, nicotinic acid, sinapinic acid esters, volatile oil, and lysosin material of antimicrobial activity. Several kinds of sinapinic acid esters and flavonoids are of a high radical scavenging potency.
- **Pharmacological action**: Radish is an antioxidant, aphrodisiac, appetizer, sedative, diuretic, galactagogue and neurotonic. It is used for glaucoma, epidermal layer, deafness, freckles, and kidney and spleen ailments. It also acts against rickets, as a depurative, and expels water retained in the liver and kidneys. It works as an anti-scorbutic, against intestinal mould, improves complexion, and against respiratory and digestive diseases. Natural tea is useful as a supplementary agent for preventing and improving diabetes. The leaves and roots are used to treat cancer as antimicrobial and antiviral agents. Pickled radish blocks the growth of solid tumours, strengthens the immunity of the spleen, and increases the activity of glutathione-S-transferase that removes toxic materials in a liver.

  Radish juice is used for liver congestion, gall and liver stones, rheumatism, arthritis, asthma and as an anti-tussive. Seeds are used for coughs and impotency and radish oil is used for ailments and in hair care. Radish also helps cure jaundice and bladder diseases.

  Black radish is an antioxidant used for coughs and as a digestive. Strengthening the respiratory system may activate the liver cells, maintain a healthy gallbladder, act as a digestive, facilitate urination and cleaning, and act as an antibacterial and co-adjutant for hepatic colic. The root is rich in vitamin C; it cures coughs, infections and free radicals. The high fibre content is a helpful laxative for constipation. The plant is used for intestinal parasites, asthma and other chest complaints. It is an excellent food remedy for stone, gravel and scorbutic conditions.

In folk medicine, radish seed oil is useful in cases of gout and rheumatism. It is diaphoretic and strongly useful for bladder inflammation treatments, and advantageous for the stomach as it cures the septic intestine and the colon's internal membrane inflammation. The oil treats bronchitis, coughs and asthma, and is a sexual stimulator in view of its activation of the blood circulation in fine blood vessels. Being of a blood reddish tone, it makes it more vivid and is useful for gall stones. Radish contains the antibacterial and antifungal substance raphanin, which reduces the secretion of the thyroid gland and is an appetizer. It contains vitamins B and C, which are beneficial for the skin, and helps get rid of coughs, sore throats and fever. The oil is a laxative and helpful for weight loss. It helps in relieving pain when gently applied to injuries. When used in hair massages it increases the strength of hair, improves blood circulation and helps reduce headaches. Radish oil is a good appetizer and mouth and breath freshener. In view of its characteristic as a diaphoretic, the oil is also useful for rheumatic pains.

- **Other uses**: Growing the plant repels beetles from tomatoes and cucumbers. It is also useful against various other insect pests such as the carrot root fly. There is a fodder variety that grows more vigorously and is used as a green manure. Edible oil is extracted from the seeds.
- **Caution**: Japanese radishes have higher concentrations of glucosinolate, a substance that acts against the thyroid gland. It is probably best to remove the skin.
  People with gallbladder stones or obstructions, and those with severe kidney or hepatic (liver) problems, should not use the black radish without consulting a qualified health care professional. It is not allowed to be taken by those with liver diseases, stomach problems, abdominal colic, or weak stomachs and intestines.

Radish plant

- **Arabic name:** Retem
- **Scientific name**: *Retama raetam* (Forssk) Webb.
- **Common name**: Ratame, White Broom, Juniper, Broom
- **Family name**: Leguminosae / Fabaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: The whole plant, fruits, leaves, stems, and seeds.
- **Chemical constituents:** Flavonoids including apigenin 7-glucoside, luteolin 7-glucoside, chrysoeriol 7-glucoside, orientin, orientin 4'-glucoside, apigenin 6, 8-di-C-glucoside, daidzein, daidzein-4', 7-dimethyl ether, and proline.
  Seeds yield alkaloids (retamine, sparteine, anagyrine, thermospine, cytisine, sophoramine, and sophochrysine), mucilage and galactomannans. □-sitosterol was isolated from the unsaponifiable matter of the fixed oil and the following alkaloids were distributed in various organs: pachycarpine, methylcytosine, trigonelline and choline. Cytisine is predominant in the mature fruits.
- **Pharmacological action**: The aqueous extract lowers lipids and body weight in normal and severely hyperglycaemic rats. The leaves' extract is antioxidant, cytotoxic, hypoglycaemic, controls plasma cholesterol and reduces morbidity and mortality from vascular diseases. In folk medicine, it is used for intestinal worms, scabies, fever and abortions.
- **Other uses**: Plant branches are used for manufacturing certain types of baskets, straw containers and tools. The plant is a forage plant, a source of fuel and a sandy soil binder.
- **Caution**: The ingestion of the plant poisons livestock, and its roots possess a toxic substance.

Fruiting plants

- **Arabic name**: Gharib, Al-Kingharo
- **Scientific name**: *Rhoicissus rhomboidea* (E. Mey. Ex Harv.) Planch.
- **Common name**: Grape Ivy
- **Family name**: Vitaceae
- **Growth habit**: Climbing shrub
- **Life cycle**: Perennial
- **Part/s used**: Bark and roots.
- **Chemical constituents**: Polyphenolic compounds, flavonoids, organic and inorganic compounds such as coumarins, phenolic acids and antioxidant micronutrients, e.g. Cu, Mn, Zn.
- **Pharmacological action**: The plant has anti-inflammatory, anti-microbial, antioxidant and anti-fungal activities. Methanol extracts inhibit the activities of the 1, 1'-diphenyl, 1-2 picrylhydrazyl free radicals, and xanthine oxidase and also prevents the production of thiobarbituric acid reactive substances and free radical-mediated deoxyribonucleic acid (DNA) sugar damage. The extracts have a strong chelating effect on Fe++ ions. The roots are used as traditional medicine, and are probably used during pregnancy to facilitate delivery.
- **Other uses**: The plant treats livestock diseases. It is an ornamental that can be used for covering fences and trellises and also indoor plant.
- **Caution**: No reports.

- **Arabic name**: Robinia, Sant Kathib
- **Scientific name**: *Robinia pseudo-acacia* L.
- **Common name**: False Acacia, Locust Tree, Whya Tree, Black Locust
- **Family name**: Leguminosae / Fabaceae
- **Growth habit:** Tree
- **Life cycle**: Perennial
- **Part/s used**: Flowers, bark of young branches, and roots.
- **Chemical constituents:** Important constituents of the plant include the toxalbumin robin, which loses toxicity when heated, and robinin, a non-toxic glucoside. Flowers contain a glucoside, robinine, which, on being boiled with acids, is dissolved into sugar and quercetin. It also contains lectin that resembles the ricin in castor beans, flavone-glycosides, essential volatile oil, albumin, robin and samoalphazin in the bark. All plant parts contain toxic materials of which the most important are the robin protein, phasin, syringin, asparagine, robitin, robinin, lectin protein resembling recin in castor beans but with lower toxicity, and inioan acaciin gum.
- **Pharmacological action**: The plant is generally antispasmodic, antiviral, aromatic, cholagogue, diuretic, emetic, emollient, febrifuge, laxative, narcotic, purgative, and tonic. It is alos anti-convulsive, antipyretic, antiseptic, and cathartic. The flowers are aromatic, emollient, cooked and eaten, and are used for the treatment of eye ailments. The root's bark can be chewed to induce vomiting, or held in the mouth to allay toothache. The fruit is a narcotic. The leaves are cholagogue, emetic and choleretic. The leaves' juice is a virus-inhibitor.
  Flavone-glycosides and the essential oil are tranquillizers and relaxants. The toxic robin albumin and phasin are emetics and bowl evacuators.
- **Other uses**: The plant's hard wood is used in furniture, flooring, panelling, railroad ties, mine timbers, fence posts and small watercraft. The plant is highly valued as firewood for wood-burning stoves. The seeds and the young pods are edible when cooked, after the poisons have been degraded by heat. Flowers are eaten as beignets when dunked in butter and fried in oil. The toxalbumin robin loses its toxicity by heat and robinin is a non-toxic glucoside. Flowers are cooked with a fragrant aroma, are used in making jams and pancakes and can be made into a pleasant drink.

The seeds are cooked, boiled and used like peas after they lose their acidic taste. Young seedpods can be cooked. The pods contain a sweetish pulp that is safe to eat. A strong, narcotic and intoxicating drink is made from the skin of the fruit.

❖ **Caution**: All plant parts are poisonous. Feeding on dropped withered leaves results in the intoxication of neural and digestive systems. The leaves, seed shells, seeds, bark and roots could be toxic to all animals and especially to horses. The toxalbumin robin (1.6% in bark) is of most concern and is a protein synthesis inhibitor.

Horses that have digested the plant show signs of anorexia, depression, incontinence, colic, weakness, and cardiac arrhythmia about an hour after consumption. The inner bark contains a poisonous robin, which is emetic and purgative. It is capable of coagulating the milk casein and of clotting the red corpuscles of certain animals. Chewing the bark and swallowing the juice causes dryness of the throat, bloody diarrhoea, burning pain in the abdomen, dilatation of the pupils, vertigo and muscular twitches, and excessive quantities also cause a weak and irregular heart action. Though the leaves have been said to produce poisonous effects, the leaves have been recorded by some as even affording wholesome food for cattle. The ingestion of the plant, especially in large amounts, is expected to have effects on major body organs such as the liver, heart and kidneys, followed by death.

- **Arabic name**: Ward Barri, Ward Nisreen
- **Scientific name**: *Rosa canina* L.
- **Common name**: Dog Rose
- **Family name**: Rosaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Fruits, roots, leaves, flower petals, and seeds.
- **Chemical constituents**: Rose oil is constituted of more than 300 chemicals but only 100 have been identified. Mainly vitamin C is present in flowers, fruits and seeds. In addition, other water-soluble vitamins (A, K and riboflavin) are available. In addition, nicotinic acid, tannic oil, fat, tocopherol, essential oils, sugar, fatty acids, amino acids, carotenoids, polyphenolic compounds are present in the plant. The fruit is a very rich source of vitamins and minerals, especially vitamins A, B, P, C and E; it also contains sugar, taimin, pectins, carotene, colouring materials, organic acids (mainly citric and oleic), fatty acid and low essential oil. Flavonoids and other bioactive compounds are also found.
- **Pharmacological action**: The plant is an anti-inflammatory, acidulous, antiseptic, astringent, aphrodisiac, diuretic, emollient, and vitaminizing, and is used for gastritis and as a depurative. It cures colds, flu, diabetes, anaemia, anorexia, cardiac disorders, colitis, convulsive, diarrhoea, ulcers, and bleeding.
  The petals, hips and galls are astringent, anticancer, carminative, diuretic, laxative, ophthalmic, tonic and vermifuge. The hips are taken internally for colds, influenza, minor infectious diseases, scurvy, diarrhoea and gastritis. The syrup made from the hips is a pleasant flavouring in medicines and is added to cough mixtures. Distilled water made from the plant is slightly astringent and used as a lotion for delicate skins. The seeds are a vermifuge.
  The fruit is a good source of essential fatty acids; it is under investigation as a food capable of reducing the incidence of cancer and halting or reversing cancers' growth. Flowers are a source of colouring agents, vitamin C and antioxidants.

Rose oil or flower powder is used as a poultice to cure skin sloughs and redness. A rose decoction drink is a stimulant, a tonic for feeling organs, a cure for vomiting and colds, and is recommended for diabetes. Fruits are cooked with honey for general debilities in children and old persons. It is advised to be taken for influenza and chest inflammations. A fruit and twig tea is an astringent, mild diuretic and laxative, and their powder is used as a gargle for bloody phlegm and acts as a toothache sedative. A rose drink and an aqueous extract with sugar are used for curing different diseases such as hepatitis, nephritis, gallbladder, kidney and gallstones, anaemia, and stomach and intestinal ulcers.

It is advisable to use rose for colic and its seed decoction for gout, rheumatism, nephritis and cystitis. A root decoction is effective for cholecystitis, urinary tracts and malaria. A flower petal infusion is used for throat congestion and influenza, and is beneficial for diarrhoea, dysentery and gastroenteritis. Flower petals are aromatic, stimulant and flavouring. Rose is useful for acne, helps wound healing and is used in eye poultices.

- **Other uses**: Rose is an important source of vitamins, mainly vitamin C. Infused dried leaves or dried fruits in boiling water have often been used as a substitute for tea. Its fruit is used raw or cooked as delicious jams and syrups for babies. It is possible to prepare a medical wine and syrup from fresh fruits. Valuable oil is extracted from rose flowers and is used in perfumes and in the cosmetics industry. The oil is also used in the soap industry and as a spice. It is externally used to clean the body from wounds and as a body fragrance by adding it to bathwater. The seed is a good source of vitamin E, and can be used as a food supplement. Petals, either raw or cooked, are eaten as a vegetable and are also used to make an unusual scented jam.
- **Caution**: Exposure to plants' juice or sap or a puncture wound from the thorns may produce a skin rash or irritation. Skin wounds from this plant are painful, causing large blisters and skin burning. Some care should be taken when eating the plant's fruits since these can be hazardous.

Plant with different flower colours

- **Arabic name**: Ward Joory, Ward Dimashky
- **Scientific name**: *Rosa damascena* L.
- **Common name**: Rose, Damask Rose
- **Family name**: Rosaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Flowers, petals, hips (seedpods), essential oil, fruits, and seeds.
- **Chemical constituents**: Essential oil, flavones, abscisic acid, phenols, rutin and quercetin flavonoids. Rose oil contains more than 300 known compounds; the main components are citronellol, phenyl ethanol, camphor, geraniol, nerol, myrcene, farnesol, stearopten with traces of nonanol, linalool, phenylacetaldehyde, citral, carvone, citronellyl acetate, 2-phenylmethyl acetate, methyl eugenol, eugenol, rose oxide and four unknown compounds (with sensory descriptors of coffee, mould, rancid, and pine). □-damascenone and □-ionone were found to be minor odorants, and nonadecane, heneicosane and (E, E)-farnesol are also present.
- **Pharmacological action**: Damask rose oil is an antidepressant, anti-phlogistic, antiseptic, antispasmodic, antiviral, aphrodisiac, astringent, bactericidal, choleretic, cicatrisant, depurative, emmenagogue, haemostatic, hepatic, laxative, a nervous system sedative, stomachic and cardiotonic. It is used for liver, stomach, and uterus problems and against HIV. It addresses sexuality, self-nurturing, self-esteem and dealing with emotional problems. It is most helpful for poor circulation and heart problems, which include heart palpitations, arrhythmia and hypertension and boosts the gallbladder. The oil is emotionally soothing, tones and cleanses the skin and is perfect for ageing or thread-veined skin. It is a fragrance, creates a luxurious, soothing experience and is intoxicating. The oil is creative and a gently cheering oil. It is a perfume, skin conditioner, anti-inflammatory and antibacterial. It is anti-haemorrhaging, anti-infectious and prevents scarring. It may help with chronic bronchitis, asthma, tuberculosis, frigidity, impotency, skin diseases, wounds, ulcers, sprains, wrinkles, thrush and gingivitis. It is stimulating and elevating for the mind and used for the respiratory system. Damask rose oil helps with coughs, hay fever, digestive system problems, and nausea, and has cleansing, regulating and purifying effects on the female sex organs and can be used for regulating and balancing hormones, irregular menstruation, leucorrhoea and menorrhagia.

The oil is most effective for moisturizing and hydrating the skin, while also having a general stimulant action, especially for dry, mature and irritated skin. It is used to repair broken capillaries, inflammation as well as skin redness, and is useful for eczema and herpes. Rose water can be used for conjunctivitis.

A medical tea is prepared from the flowers. The oil is a carminative and hair tonic. Flower petals are a mild astringent, aromatic and add flavour. The oil is also an anti-convulsive, anti-virus, aphrodisiac, nerve tonic and a cure for skin diseases.

In folk medicine, rose oil is used to reduce muscle fatigue and tension, and is an antiseptic and moisturizer for soft skin and a sedative for headaches and for the stomach. It activates the functions of the liver and kidneys and heals wounds. It also helps to protect scarfskin from wrinkles, is a hair tonic and muscle relaxant and helps to overcome stress, flatulence and stomach ailments.

- **Other uses**: The famous rose oil is used in the perfume industry, and its petals are made into jams. Rose oil and water are obtained from the plant's flowers. Its oil is a tranquillizer and is added to perfumes and drugs. Buds are usually harvested before opening and are added to candy for an aromatic flavour. A drink is also prepared from fruits rich in vitamins, while rose fat is the most expensive substance used in perfumes' composition.
- **Caution**: Damask rose oil is non-toxic, non-irritant and non-sensitizing, but should not be used during pregnancy. Exposure to juice or sap from the plants or a puncture wound from the thorns may produce a skin rash or irritation. Skin wounds can be painful, causing large blisters and skin burning. It should be avoided during the first four months of pregnancy.

Plants with different flower colours

- **Arabic name**: Ward Baladi
- **Scientific name**: *Rosa gallica* L.
- **Common name**: Rose, Dark Red Rose
- **Family name**: Rosaceae
- **Part/s used**: Leaves, flowers, fruits, and oil.
- **Chemical constituents**: Mineral elements, polyphenols, and geraniol, and their glucosides, triterpenoid, steroid glycosides, glucosides of monoterpene and aromatic alcohols in the essential oil. Oil components (linalool, citral, citronellol, nerol, geraniol, □-phenylethanol, and stearopten), pectin, maleic acid, resin, essential oil, sugar and saponin. Fruits are rich in vitamins, especially A, C and E, flavonoids active bio-compounds, and main fatty acids.
- **Pharmacological action:** The plant is a cardiotonic, febrifuge, nervine, and is used against coughs, fevers, mouth ulcers, skin disorders and throat pain. The petals' infusion and confection are antiseptic, and are used for bleeding, headaches, constipation, lung diseases, throat sores, wounds, nose sensitivity and inflammation, diarrhoea, poorly healing sores, and gout, and for eye baths. Essential oils and their monoterpenes are useful for increased bone resorption diseases, such as Paget's disease, tumour-induced bone disease and particularly osteoporosis. The flowers' essential oil is an antibacterial, a constituent of low-irritation cosmetics, and is used in aromatherapy to counter depression, anxiety, and negative feelings.

  The petals are a mild astringent, aromatic and flavouring, antioxidant, and tonic. They are internally used for colds, bronchial infections, gastritis, diarrhoea, depression, lethargy, vitamin C stabilizers, and deodorants for the removal of faecal odour or "ageing odour". Externally, it is used to treat eye infections, sore throats, minor injuries and skin problems. The fruit is used as food as it is very rich in vitamins and minerals, especially vitamins A, C and E, flavonoids and other bio-active compounds and essential fatty acids. It is used as a food to reduce cancer incidence and to halt or reverse cancers' growth.

  Rose has a beautiful fragrance, which is almost intoxicating and aphrodisiac-like. It enhances the frequency of every cell, bringing balance and harmony to the body. It is anti-haemorrhaging, anti-infectious and

prevents scarring. It may help with chronic bronchitis, asthma, tuberculosis, sexual disabilities, frigidity, impotence, skin disease, ulcers, sprains, wrinkles, thrush, and gingivitis. It stimulates and elevates the mind, and creates a sense of well-being. Flower petals and/or their extracts contain inhibitors of the influenza virus.

- **Other uses**: The rose hip is rich in vitamin C, iron, and antioxidants, and is useful for making healthy fruit jams. The flowers are used as a condiment, and raw or cooked petals can be added as a decorative garnish to salads, and can also be crystallized or preserved in syrup. They are dried and used as a flavouring agent in tea, beverages and cakes. The dried petals and flower buds are an important ingredient in spice mixtures. Rose water, from petal infusions, is used as a flavouring in various confections. The seed is a good source of vitamin E; it can be ground and mixed with flour or added to other foods as a supplement after the removal of seed hairs.
- **Caution**: Exposure to juice or sap from the plants or a puncture wound from the thorns may produce a skin rash or irritation. Skin wounds from this plant can be extremely painful, causing large blisters and burning of the skin.

  The plant's oil should not be used by patients with gallbladder complaints, gastric ulcers, weak stomachs or liver complaints. The alimentary canal can be damaged by long-term use of the plant. Its essential oil should not be self-administered, nor to pregnant women, and should never be self-administered internally. The oil is not toxic, but a medical doctor should be consulted when the dose is unknown.

Plants with different flower colours

- **Arabic name**: Hasalban, Ikleel Al-Jabal
- **Scientific name**: *Rosemarinus officinalis* L.
- **Common name**: Rosemary
- **Family name:** Labiatae / Lamiaceae
- **Growth habit**: Sub-shrub
- **Life cycle**: Perennial
- **Part/s used**: Leaves, young branches, the whole plant, and its oil.
- **Chemical constituents**: Aromatic oil (up to 2%) containing camphor, camphin, 1, 8-cineole, □-pinene, verbenone and borneol as its major components. Eucalyptol, carnosol, pentacyclic triterpenoids (ursolic, oleanolic, betulinic acid carnosic acid, caffeic acid, and rosmarinic acid), diterpenes, rosemyricin, abietane diterpenoid, antioxidants, rosmaridiphenol and rosmanol. In addition, the plant contains tannins, saponins, organic acids, flavones and tannic acid.
  Chemicals include camphor and eucalyptol (13 to 31%) in the herb's essential oil. Leaves' essential oil is made from eucalyptol (11.2-47%), pulegone (0.98%), camphor (13-31%) and carvacrol (1.7%).
- **Pharmacological action**: Rosemary is a disinfectant, antiseptic, chloritic, expectorant, rubefacient, anti-rheumatic, appetitic, sedative, diuretic, hypoglycaemic, cholagogic, carminative, and tonic. It is an anti-catarrhal, antispasmodic, and anti-hypertensive, used for headaches, stomach aches, nausea, migraines, fever, poor circulation, kidney stones, and indigestion, as a mouth wash and perfume, and also balances the endocrine system, helps overcome mental fatigue and improves memory.
  Externally, the plant can be used for hair lotions, dandruff, wounds, and gout by rubbing it into hands and feet. The oil possesses high antibacterial, insecticidal, antifungal, antioxidant and anti-cholesterolemic properties. It is used for bronchitis, indigestion, kidney diseases, menstruation disorders, liver diseases and throat irritation. The oil possesses vulnerary, spasmolytic, thymoleptic and hepatoprotective effects against azathioprine-induced acute liver damage. It is useful for its virustatic, astringent, anti-inflammatory and anti-tumour effects. As an ointment or liniment it is anti-rheumatic, reduces arthritis, and is a nerve excitant and memorial overstrain. Skin cosmetics contain carnations, antioxidant plant juices or extracts, and dermal matrix component-stabilizing compounds or extracts. A skin cream containing L-carnitine is good for its anti-wrinkle effects in humans.

The plant contains carnosol or carnosic acid, and the anti-male hormone agents inhibit the binding of testosterone or DHT to androgen receptors. These are useful for preventing or improving male hormone-dependent conditions such as prostate gland tumour or hyperplasia, acne, seborrhoea and alopecia. The plant is prepared in compositions for the treatment of psoriasis, toothpaste, and shampoo compositions containing surfactants and plant extracts for straightened hair, as it is a hair growth stimulant that prevents hair loss by cell activation and intracellular energy metabolism stimulation.

Rosemary extract is a powerful antioxidant; rosmarinic acid is a skin-softening agent, and carnosol is a phenolic diterpene of antioxidant and anti-carcinogenic properties. Rosemary may be beneficial for skin conditions and dandruff., and fights candida and supports the immune system.

Carnosic acid may shield the brain from free radicals, lowering the risk of strokes and neurodegenerative diseases like Alzheimer's disease and amyotrophic lateral sclerosis, and is an anti-inflammatory. Carnosol is a promising cancer chemopreventative and anti-cancer agent. The plant enhances memory performance and its powder, when given to rats, reduced the binding of certain carcinogens by 76% and greatly reduced the formation of mammary tumours. The oil is excellent for refreshing tired muscles, feet and mind, helps combat water retention and cellulite and is a good hair tonic.

In folk medicine, the plant's oil is used as an antiseptic, muscle relaxant, soothing agent and a skin conditioner. It prevents hair loss, and is used for cleaning the complexion and granular conjunctivitis-infected eyes. It is a tonic, stimulates and activates the liver and spleen, and is used for outer skin beautification purposes and bile secretion (sedative for colic gripes). It cures headaches and is a memory invigorator, and oil's regular use helps with dandruff removal and makes hair grow stronger and longer. It is commonly used as a mouth freshener to remove bad breath and helps with relieving muscle pains.

- **Other uses**: Rosemary is an important aromatic and culinary herb used in teas and as a flavouring for different kinds of food. It is also used as an ingredient in hair lotions and perfumes, shampoos, lotions, and soaps. It is used externally and prepared in mixtures. Rosemary is a good ornamental and bee herb. It is used in dishwashing detergents and as a hedge for bordering home gardens.
- **Caution**: Flowering tops and leaves are parts of possible concern. Very strong doses are poisonous. Its oil should never be taken internally. Rosemary is never to be used during pregnancy, or by those with high blood pressure or who suffer from epilepsy. It may cause skin irritation.

- **Arabic name**: Safandar
- **Scientific name**: *Ruscus aculeatus* L.
- **Common name**: Butcher's Broom
- **Family name**: Liliaceae / Alliaceae
- **Growth habit**: Sub-Shrub
- **Life cycle**: Perennial
- **Part/s used**: Roots, young stems, rhizome, and leaves.
- **Chemical constituents**: The rhizome contains essential oil and resin. Other constituents include sugar, saponoside, steroidal molecules called ruscogenins and neoruscogenins, which are mainly saponins.
- **Pharmacological action**: The plant is antiphlogistic, anti-inflammatory, antioxidant, anticoagulant, diuretic, a mild laxative, operative and febrifuge. It is used for vascular blood circulation disorders, vascular damming, phlebitis, thrombosis, heavy legs (improves blood and lymph circulation in legs), acrocyanosis, wounds, edema, breast cancer, kidney insufficiencies (oliguria, stones, gout), menopause, jaundice, gallstones, dementia and pre-menstrual syndrome. Leaves are used in cases of atherosclerosis, chronic venous insufficiency, menstruation disorder, haemorrhoids and varicose veins.
  The root is aperient, deobstruent, depurative, diaphoretic, diuretic and vasoconstrictor. It was taken internally in the past for gout, kidney and bladder stones. At present it is used for phlebotonics.
  Ruscogenins and neoruscogenins are astringents to improve blood circulation in veins. The root is applied for varicose veins, haemorrhoids, haemorrhoids during pregnancy, other vascular blood circulation disorders, and vascular inflammations. It can also be applied as a prophylactic and a post-operative thrombosis preventer. A root decoction is used for gravel, scrofulous tumours, and to clear phlegm. It also relieves dyspnoea. The plant is diaphoretic and aperients, and is used in urinary obstructions and nephritic cases. The boughs have been employed for flogging chilblains.
- **Other uses**: Young shoots are cooked and used as an asparagus substitute. The taste is pungent and rather bitter. The roasted seeds are a coffee substitute.
- **Caution**: The plant is not approved by the FDA as a medicine; all the therapeutic claims made for these products are illegal and have not been substantiated or proven. It is inadvisable to use it for circulatory disorders, or any other potentially serious health problem, especially in self-medication. The herb is of no or very low toxicity. However, in rare cases and in high dosages it can cause nausea.

- **Arabic name**: Safsaf Baki
- **Scientific name**: *Salix babylonica* L.
- **Common name**: Weeping Willow, Chinese Willow
- **Family name**: Salicaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Leaves, stem, and stem bark.
- **Chemical constituents**: The bark contains salicin glucoside that can be transformed in the human body into salicylic acid – the active ingredient in aspirin and resins.
- **Pharmacological action**: It is anti-diabetic, and reduces fever and headaches. It is used for rheumatism pain, and is a sedative and febrifuge.
- **Other uses**: It is a beautiful ornamental plant used for basket making. Its leaves are eaten in Asia. The plant is grown in public and home gardens and on roadsides.
- **Caution**: No reports.

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Flowering branches

- **Arabic name**: Mayramiyah, Nai'meh, Qusei'in, Shujairi
- **Scientific name:** *Salvia officinalis* L.
- **Common name**: White Sage, Sage
- **Family name**: Labiatae / Lamiaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Leaves before flowering, flowering twigs, and probably flowers and roots.
- **Chemical constituents**: Essential oil (0.5-2.5%) made from camphor, eucalyptol, cineole, borneol, linalool and thujone represents 10-30% of the oil, as well as triterpenic acids and ursolic acid. Sage leaf contains tannic acid, resins, bitter material (salvin, picrosalvin), salicin, amygdalin, oleic acid, ursonic acid, ursolic acid, cornsole, cornsolic acid, fumaric acid, chlorogenic acid, caffeic acid, niacin, nicotinamide, flavones, flavonoid glycosides, and estrogenic substances. It also contains diterpenoid quinones in the roots, and polysaccharides.
- **Pharmacological action**: The plant is carminative, stomachic, tonic, appetizer, digestive, spasmolytic, antiseptic, antibacterial, astringent, anti-diarrhoeal, and anti-hidrotic, and is also used for skin-lightening or anti-wrinkle cosmetics. It is used to treat tonsillitis, colds, excessive perspiration, flu, cough, diabetes, gastric pains and rheumatism. The leaf extract may be effective and safe in the treatment of hyperlipidemia. It is possibly used as an anti-sweating agent, antibiotic, antifungal, antispasmodic, estrogenic and hypoglycaemic.
  The skin cosmetics contain carnitines in the plant juice or extract which are antioxidants, and prevent skin ageing, rough skin, and dry skin.
  Carnosol or carnosic acid are anti-male hormone agents that inhibit testosterone binding to the androgen receptor. They are useful for preventing or improving male hormone-dependent conditions such as prostate gland tumour or hyperplasia. They are hepatoprotective against azathioprine-induced acute liver damage.
  In the root, tanshinone derivatives are acetylcholinesterase inhibitors and are used in treating diseases associated with the depletion of acetylcholine such as cognitive impairment, Alzheimer's disease, insomnia, vascular dementia, memory loss, attention disorders and other sleeping disorders. The volatile oil is an anti-inflammatory, and a cure for fevers, hepatitis, tuberculosis, and fractures. The plant is a powerful cleansing herb, and expels mucus and poisonous waste matter from the body.
  Its perfume is a useful regulator of the central nervous system. It may help with menstrual disorders, and is used as a soothing agent in folk medicine.
  Sage is used for eczema, acne, dandruff and alopecia. It has also been recognized for its benefits in strengthening the vital centres, the metabolism, and aiding in the menopause. It may help relieve depression

and mental fatigue. The plant acts directly through the tissue of the brain and eye to support the memory and thinking and is an anti-sudorific. Its leaves are an astringent poultice, mould preventive, antiseptic and relieve convulsion. Its tincture as a throat gargle cures gingivitis, tonsillitis, pharyngitis and mucus membrane in the mouth. It has antimicrobial activity and lowers perspiration.

Estrogenic substances help alleviate certain female disorders. Its infusion as a gargle is used for sore throats and mouth irritations and strengthens gums. The herbal bath aids stiff muscles and arthralgia and is used for liver and gallbladder complaints. It is also used on female genitals, for general weakness, hypotension, to settle the stomach, reduce sweating, and diminish milk flow when a mother is weaning a baby. Volatile oils soothe mucus membranes, relieve flatulence and the gut and are used as an aid to mental alertness. They are also used for massages, baths, facials, masks, compressions, lotions, and body wraps. Sage is a nerve tonic aroma, and is used for neurasthenia and vertigo. Clary sage (*Salvia sclarea*) is beneficial in regulating cells and balancing hormones. It helps with circulatory problems and haemorrhoids. The tea from the leaves is used to aid digestion.

In folk medicine, the oil's primary use is to aid in controlling high blood pressure, and helps in reducing sore throats when applied externally on the chest and throat, as well as in the treatment of skin problems such as rashes and swollen skin to alleviate scars and stretch marks as an emollient for the skin, and hot oil for damaged hair. A sage infusion is used for lung, intestine, liver and gallbladder inflammations, severe perspiration, tuberculosis and diabetes. It is used for alopecia as a head wash and in children's baths, and it reduces lactation. A plant decoction is used for impotence, and as a sedative, anti-obesity, anti-rheumatic, and anti-diabetic; it also cures whooping cough, asthma, and diarrhoea. Some other reports indicate that it is a memory and brain tonic and helps against rheumatism.

- **Other uses**: The plant is a natural source of flavourings. An important culinary herb, it is used as a seasoning for meat, chickens, vegetable and egg dishes and stuffing. It is also used for flavouring fatty meats, sage derby cheese and poultry, Lincolnshire sausages, and in sauces. It is also used in stewed tomatoes, butters, and as a tea. It is a good bee herb. The dried extract is used in the manufacture of medicaments, food, functional food, and nutraceutical or dietary supplements for use in improving secondary memory function or enhancing attention in a human subject. Oils are useful for dishwashing detergents, and an insecticidal oil is excellent against mosquitoes, ants, mites, roaches and other insect pests. Fresh sage repels cabbage moths, carrot fly and ticks. It has antibacterial properties and is combined with rosemary as a preservative. The oil is used in the food industry, drinks and perfumes. It is a carminative spice.
- **Caution**: Dried leaves and the herb are of concern when the dried leaves contain no less than 1.5% v/m essential oil, calculated in reference to the anhydrous drug essential oil of leaves: α-thujone (12-65%), β-thujone (1.2-35.6%) (total thujone content 30-60%), eucalyptol (8-22.5%), camphor (4.4-30%), estragole, and carvacrol. Neither the sage plant nor its oil is to be used by pregnant women or by those suffering from epilepsy. Thujone can induce abortion in large quantities. The plant in general should not be internally used in large doses for a long period because of its thujone content.

Jerash historical city

- **Arabic name**: Baylasan, Bailasan Aswad, Khumman, Khumman Aswad
- **Scientific name**: *Sambucus nigra* L.
- **Common name**: Elderberry, Black Elder
- **Family name**: Caprifoliaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Fruits, flowers, bark, and thick roots.
- **Chemical constituents**: Glycoside sambunigrine, maleic acid, carotene, vitamin E, sampolin, resin, potassium nitrate, bitter materials, anthocyanins from the cortex. Conine alkaloid, flavon glycosides including rutin, quercitin, cyanogenic glucoside sambunigrine, rutin, choline, organic acids (gallerian, acetic, maleic), volatile oil, mucilage and tannin in the flowers. Leaves contain vitamin C, sambunigrine, resins, aromatic oil and carotenes. The rhizome includes bitter materials, tannin and volatile oil, lectines and isoquercitrin. Sambuc is rich in potassium nitrate, fatty oil and sugars, and the bark contains lectin, rutin and isoquercitrin.
- **Pharmacological action**: The plant is used for asthma, respiratory system and chest diseases such as influenza and colds, headaches, haemorrhoids and ear inflammations. It is diuretic, emetic, diaphoretic, cathartic, laxative and sedative. It is important for diabetics, useful for itching, toothache, dyspnoea, asthma, weak erections, stomach debility, and liver, kidney and spleen problems. It is also effective against urine retention and flow, gravel and nerve problems such as paralysis, gout and arthritis. It is a wound disinfectant and helps them to heal, is effective as an anti-catarrh, and is used for throat diseases including sores and asthma. A liquid extracted from the plant is used as an eye bath for ophthalmia, mouth sores, and tonsillitis.
  Flowers are febrifuge, sudorific, pectoral, antispasmodic, diaphoretic, antipyretic and a cure for rheumatism. They are used in tea mixtures for colds, influenza, and weight loss and are also useful for nerve disorders such as neuralgia and migraines. A fresh flower extract is revulsive, rubefacient and a useful addition to laxative tisanes and flower decoctions or infusions for coughs.
  The plant's bark is warming, laxative, tonic and effective for the liver. It is diuretic, prevents nyctalopia and helps with sight.
  Its leaves are diuretic, useful for haemorrhoids and for burns as a poultice. They are anti-tussive, and are used for fever in the form of poultices to calm ailments, and as eye drops against glaucoma (macular edema). An

ointment from the plant's green leaves is also beneficial for haemorrhoids, the construction of immunotoxins and conjugates for cancer therapy.

Nigrin b is used for cancer immunotoxitherapy, bronchitis, and as an expectorant. Plant and flower cosmetics are antioxidant, antiviral, dermal matrix stabilizers, and the dermatologic ointment containing lactate is used for the treatment of skin lesions and burns.

Berries are rich in vitamin C, and are laxative, depurative and anti-neuralgic. A seed decoction is used externally for dropsy.

- **Other uses**: The plant's flowers are important in cosmetics. Its fruits contain organic anthocyanin dyes, organic acids, sugar, rutin and large amounts of vitamin C. They are also used in stews, jams and syrups. Fruit juice with the fermented fresh flowers, lemon juice and peels makes an appetitic drink.
- **Caution**: If it is to be taken internally, the plant should be used under strict medical supervision. The plant contains ebuloside cyanogenic glycosides lectine named selid. The leaves are emetic. The plant's ingestion may cause some minor symptoms such as rashes, vomiting or diarrhoea, but small amounts may not cause any symptoms at all. The plant is known to cause problems in animals. Nigrins seem to be responsible for toxicity in elder people. The plant's bark should never be used by pregnant women since it is purgative and cathartic.

- **Arabic name**: Schefflera
- **Scientific name**: *Schefflera arboricola* Wight
- **Common name**: Umbrella Tree, Dwarf Schefflera, Scandent Schefflera
- **Family name**: Araliaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Leaves, roots, and resin.
- **Chemical constituents**: Organic acids including citric, maleic, tartaric, fumaric, aconitic and succinic, saponins, triterpens and resin.
- **Pharmacological action**: It is an anti-inflammatory, anticonvulsant, antimicrobial, antioxidant, antiasthma, analgesic, and a muscle relaxant, and is used for abdominal diseases, bleeding, fractures, and in liver treatment. The plant has a bitter, hot and sweet taste, and used to be mentioned alongside liver meridian. The resin is used in plasters as a cure for ulcers and bleeding cuts.
- **Other uses**: It is an indoor ornamental plant.
- **Caution**: No reports.

- **Arabic name:** Filfil Katheb, Filfil Terpentine
- **Scientific name**: *Schinus molle* L.
- **Common name**: American Pepper, California Pepper Tree, Pepper Tree
- **Family name**: Anacardiaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Essential oil from leaves and fruits.
- **Chemical constituents**: Volatile oil, glycosides and (or) carbohydrates, condensed tannins, free and linked flavonoids, saponins, steroids and (or) triterpenes, and oxidase enzymes. *S. molle* essential oil components are □- and □-phellandrene, carvacrol, and □- and □-pinene, a gum-resin, triterpenoids and a biflavanone.
  Berry oils contain □-phellandrene, myrcene, □-phellandrene, limonene, and □-cadinol as their major constituents, as well as 3-epi-isomasticadienolic acid, isomasticadienolic acid, chamaejasmin, monoterpenes, triterpenes I and II, anthocyanins and triterpenoid acids.
  The leaf oil contains □- and □-phellandrene and limonene, and sesquiterpenes such as elemol, germacrene-D, □-eudesmol, and T-cadinol.
- **Pharmacological action**: The essential oil of the leaves shows an apparent inhibitory activity on the human cell line U251 (brain cancer cell line) and MCF7 (breast cancer cell line). The plant is antimicrobial, antibacterial and anti-inflammatory. It is a composition in perfume compounds. Fruits have anti-inflammatory, anti-oxidative and skin-whitening effects. The plant is used in cosmetics, bath preparations, detergents containing extracts, and food containing extracts that have anti-oxidative and skin-whitening effects. It is a source of a natural fungitoxicant.
- **Other uses**: The plant's foliage is traditionally used to repel house flies. The volatile extracts of leaves have repellent and feeding-deterrent activity against house flies. The plant is a source of yellow dyes. The fruits and leaves have an insecticidal effect as an insect repellent.
- **Caution**: The resins and volatile oil, especially in flowers, cause skin itching and hand inflammation when pruned. Flowers and fruits cause digestive system disorders. The plant is toxic to cows.

- **Arabic name**: Semsem
- **Scientific name**: *Sesamum indicum* L.
- **Common name**: Sesame, Tila Teel Oil.
- **Family name**: Pedaliaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Leaves, seeds and oil.
- **Chemical constituents**: Flavonoids including alpha-amyrin, 24-methylene-cycloartenol, beta-amyrin, squalene, cycloartenol, sesaminol triglycoside, the amino acid cycloeucalenol, lecithin, alpha-tocopherol, polysaccharides, citrostadienol, fatty acid (oleic, linoleic, stearic, palmitic, arachidonic and myristic acids). Fatty oil (47-61%) in seeds, phytosterens, flavonoids as antioxidants (sesamine, sesamol, sesamoline, sesamolinol and sesaminol) and vitamin E. Seeds also contain carbohydrates, fibres, a high level of proteins, cholesterol, vitamins, and other compounds.
- **Pharmacological action**: The plant is a demulcent, diuretic, emmenagogue, lactagogue, laxative, aphrodisiac, antiviral, anticancer, anti-tumour and antioxidant. It is used for burns, cholera, diarrhoea, dysentery, dysmenorrhoea, migraines, tinnitus, vertigo, colds and urinary problems. Lignans are used for diabetes mellitus blood, and the leaves for cholera, infections of urinary ducts, piles and dysentery. A poultice of the seeds is useful for ulcers and burns. Pounded leaves are used to treat dandruff. The oil is antioxidant, aphrodisiac and tonic. A cosmetic composition comprising plant extracts is a whitening cosmetic used for pimple-prone sensitive skin, wrinkles, skin ageing-prevention, hair regrowth and as a skincare agent. Sesame seed and vitamin E are traditionally recognized to be the food components with anti-ageing effects. Sesame lignans induce higher tocotrienol concentrations in the skin, and act together with tocotrienol to prevent oxidative damage. Externally, they are used to soften the skin and clean and beautify the hair. Sesame seed extract is useful for the stabilization of thickeners. Sesaminol triglycoside from sesame seeds is used in a diet to prevent azoxymethane-induced colon cancer.

  The seeds and oil cure coughs and pharyngitis. Seeds are used in food in cases of dizziness and tinnitus, and are a laxative and galactagogue. Sesame oil is used in cooking and cosmetics, and is rich in unsaturated fats and antioxidants because of the presence of sesamin and sesamol; it also has anti-cancer activity including against colon cancer, which is due to the presence of antioxidants and fatty acids such as linolenic acid. It is

anti-inflammation and anti-rheumatic, and is used for gastritis. Some studies have indicated its importance for cardiac and blood diseases, as it is a hypoglycaemic and reduces cholesterol levels, enhances blood coagulation, stops bleeding after birth and is useful in curing blood plates' deficiencies. It is a liver tonic and a hepatoprotective.

Externally, sesame oil is antimicrobial, cures dry and sensitive skin and delays ageing skin signs. It protects against sunlight, is used for burns and skin eruptions, removes aureole below the eye, and cures piles, dysmenorrhoea and period ailments. It is also used for menopausal syndrome because the presence of the sesamin compound acts as an antimicrobial, anticancer and antioxidant. The oil is an aphrodisiac and tonic included in a cosmetic composition that contains sesame extracts and works as a sensitive skin whitener and against boils and wrinkles; it also helps with restorative hair growth and skin care.

In folk medicine, the oil is known to be naturally antiviral and an anti-inflammatory agent. It helps fight common skin fungi such as athlete's foot fungus. It is useful during sinusitis and migraines. It also helps regulate cholesterol levels and helps joints keep their felicity. It is also used for coughs, throat inflammations and chest catarrh. It is a useful massage oil.

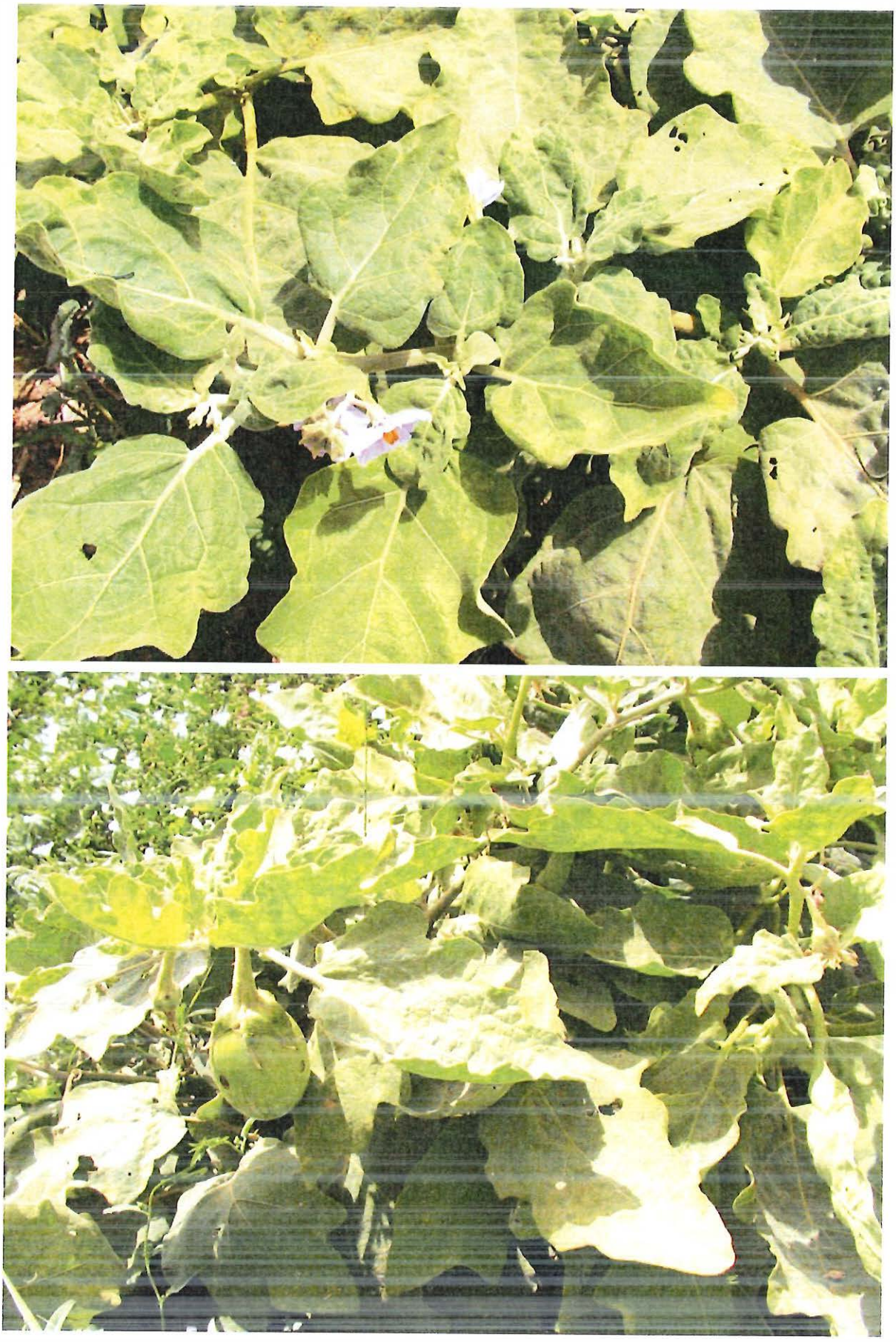
❖ **Other uses**: The edible oil is of a sweet smell and nutritive, and is used in the food industry in cakes, bread, sweets and fresh vegetables. A seed extract (Taheena) is used in salads and in different food preparations. Seeds' edible oil is tasty and can be eaten fresh. Sesame oil is used in soap or shampoo, having functionality as a hair-growing agent. Seeds are eaten raw or roasted, sprinkeled on bread and cake and made as sweets.

Caution: No reports.

Sesamum in the field

Fruits

- **Arabic name**: Bathenjan, Baitenjan
- **Scientific name**: *Solanum melongena* L
- **Common name**: Eggplant, Aubergine
- **Family name**: Solanaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: Fruits and leaves.
- **Chemical constituents**: Protein (0.5%), fatty materials (0.1%), carbohydrates (4.4%), fibres and chlorogenic acid. In the fruit peel are vitamins B, C and small amounts of calcium, iron and phosphorus salts.
- **Pharmacological action**: Eggplant is used for barrenness and warts, and was recommended in the past as a deodorant for body perspiration and diuretic. In modern medicine, it is useful for obesity avoidance and can totally overcome it if it is considered as a principal food. It prevents cholesterol translocation from the stomach to veins and reduces fat levels, and is thus important as an antisclerotic to protect against it, tighten the stomach and cure headaches. Eggplant fruits are poor in energy. Eggplant leaves are useful as a poultice for skin diseases such as burns, abscesses and shingles. It is used for cholesterol and nausea. Fruit decoctions with oil are used as a poultice or wash for external tumours, skin eruptions and arthritis.
- **Other uses**: It is a vegetable crop, and can be used in different foods.
- **Caution**: It is not advised to intake fruits fried in oil since they became oil-saturated, and thus result in obesity. People with a weak stomach are also not advised to feed on them since they are indigestive.



Eggplant of a different cultivar

- **Arabic name**: Batata
- **Scientific name**: *Solanum tuberosum* L.
- **Common name**: Potato
- **Family name**: Solanaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: Tubers
- **Chemical constituents**: Glycosides, starch (20%), protein (2%) (mainly tuberic acid) and amino acids, hemi-albumins (2%), minerals (1%), of which the most important are calcium, iron and potassium (potassium phosphate), vitamins A, B and C and atropine alkaloids in tubers. A potato's skin is rich in fibre, iron, zinc, potassium, and calcium. It contains vitamins B and C. The fresh petals of white-flowered varieties contain 0.2% rutin.
- **Pharmacological action**: Potatoes, whether raw, boiled, peeled, or mashed, have medicinal and healing properties. Glycosides are a tonic, and the protein and amino acids are important for infant growth. Potatoes should be included in a healthy balanced diet. Potato juice is taken moderately for peptic ulcers to reduce gastric acid and the heated juice is applied topically in a poultice for rheumatic complaints, joint swelling, skin rashes and complaints and haemorrhoids. Peeled but uncooked potatoes have been pounded in a mortar and then applied cold as a soothing plaster for burns and scalds. Potato skins are used to treat swollen gums and to heal burns. The tubers contain very small quantities of atropine alkaloids. One advantage of these alkaloids is the reduction of digestive secretions, including acids produced in the stomach. The leaves are antispasmodic, and root and leaf diffusates of growing potato plants possess cardiotonic activity. Dried ethanol extracts of plant foliage parts show marked hypotensive and myotropic action and a spasmolytic and soothing effect on intestinal musculature. Leaves' ethanol extracts have antifungal properties and are active against *Phytophthora infestans*. The leaves, seeds, and tuber extracts show antimicrobial activity against bacteria. The leaves are antispasmodic.
- **Other uses**: Potato is a staple vegetable food and a feed plant. Rubbing a raw potato on shoes before polishing apparently helps to make the shoes shiny. Potatoes are occasionally eaten raw, but are most commonly cooked and can be boiled, baked, fried, and added to soups, stews and other food stuffs. The cooked potato can also be dried and made into a powder and then used as a thickener in soups, etc., or be added to cereal flour when making bread, biscuits and other food.

The tubers are a source of starch that is used in sizing cotton and making industrial alcohol. Ripe potato juice is an excellent cleaner of silks, cottons and wools. The boiled potatoes' water can be used to clean silver and to restore a shine to furniture. Emollient and cleansing face masks are made from potatoes; these are used to treat hard, greasy and wrinkled skin.

❖ **Caution**: All green parts of the plant, including the green parts of the tubers, are poisonous, as they contain an alkaloid called 'solanine' and akamoide, which cause paralysis and at the same time are necessary to cure nerve strands and convulsion. Solanines are also produced in potato shoots when they sprout, even if the potato is in the dark and the shoots are not green. Excessive doses of potato juice can be toxic.

Potato flowering in the field

- **Arabic name**: Sfaira
- **Scientific name**: *Sophora jabonica* L.
- **Common name**: Japanese Pagoda Tree
- **Family name**: Leguminosae / Fabaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Flower bud, leaves, flowers, fruits and bark.
- **Chemical constituents**: Flavonoid glycoside rutin (almost 20%), phytoestrogens, genistein, kaempferol, quercetin, prunetin flavonoids, isoflavone, sophoragrin, a mannose/glucose-specific lectin, galactomannan, phytohemagglutinins and isoflavone glycoside, quercetin in bud, a flavonol tetraglycoside and flavonol triglycoside. Sophoroflavonoloside, sophoricoside, rutin, quercetin. Seeds' constituents are genistein, sophoraricoside, sissotrin, sophorabioside, kaempferol-7-O-□-L-rhamnoside, rutin, isoscutellarein, gallic acid and kaempferol triglycosides.
- **Pharmacological action**: The plant is anti-inflammatory, anti-bleeding and a laxative. Rutin decreases the permeability of the capillaries used in circulatory and neurological disorders. Isoflavones extracted from the plant's flowers are the main components in cosmetics that promote slimming, and are also used for weight loss. Isoflavone prevents ageing, alleviates menopause symptoms, and prevents women's diseases such as breast cancer and adult diseases. In addition, extracts are included in a whitening cosmetic compound and in hypermenorrhea treatment. A tea made from leaves and twigs is used to reduce blood sugar and prevent diabetes. Compositions containing sophoricoside are useful in the prevention and treatment of interleukin-related immune diseases. A sapogenin or its natural extract is used for the treatment of oligo-seborrheic dry skin.
- **Other uses**: It is an ornamental tree.
- **Caution** :The seeds are poisonous. The plant should only be used under strict medical supervision and must be avoided by pregnant women.

- **Arabic name**: Ghbairah, Shajarit Al-Samin
- **Scientific name**: *Sorbus aucuparia* L.
- **Common name**: Mountain Ash, White Beam, Rowan
- **Family name**: Rosaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Ripe fruits
- **Chemical constituents**: Organic acids, tannins, sugars, pectin, vitamin C.
- **Pharmacological action**: It is antiseptic, cathartic, diuretic and a general tonic. Dried fruits or pressed juice of fresh fruits are used for constipation and kidney disorders. A decoction of the bark is given for diarrhoea and used as a vaginal injection against leucorrhoea. The ripe berries are used as an acidulous and astringent gargle for sore throats and tonsillitis. Berries have been used for scurvy because of their antiscorbutic properties. The astringent infusion is used as a remedy for haemorrhoids and strangury.
- **Other uses**: The plant's fruits have a sour and astringent taste but are not poisonous. They are the raw material for the manufacture of sorbose, and a sweetening agent for diabetics. Vitamin C has been extracted commercially from its fruits. Sweet fruits are used to make compotes, syrups, conserves and wine and are also used in liqueur manufacture. A delicious jelly is made from the berries, which is excellent with cold game or wild fowl, and a wholesome kind of perry or cider can also be made from them. The fruit is a favourite food of birds. They can also be dried for flour and fermented to yield a strong spirit.
- **Caution**: Large doses of the fruits should not be taken internally.

- **Arabic name**: Thurra Baida
- **Scientific name**: *Sorghum vulgare* Pers.
- **Common name**: Sorghum, Broom-Corn
- **Family name**: Gramineae / Poaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Seeds
- **Chemical constituents**: A group of digestive food compounds, ash, fibres, fat, crude protein, moisture, oligosaccharides and starch phosphorylase.
- **Pharmacological action**: The grain decoction is diuretic and sedative when internally taken, and a decoction boiled in water is used for urinary and kidney complaints. The plant cures kidney disorders and urinary problems. It is claimed that it can treat cancer and improve digestion and respiration.
- **Other uses**: The grains are used in bread. Sorghum can be a source of ethanol fuel. The long fibrous panicle is used for making brooms. It provides a high-quality brush, free from discolourations. It is a crude source of starch and is used in cellulose and the alcohol industry. Some species have a high sugar content. It may be regarded as a source of alcohol. Grains are also given to poultry, cattle, and horses as feed or in medication.
- **Caution**: It is reported that cattle have been poisoned after being fed on green sorghum of the second growth stage, which may be due to the hydrocyanic acid (HCN) in leaves.

Sorghum bicolor

Sorghum sudanensis

- **Arabic name**: Sapanikh
- **Scientific name**: *Spinacia oleracea* L.
- **Common name**: Spinach
- **Family name**: Chenopodiaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Leaves and the whole plant.
- **Chemical constituents**: Spinach leaves contain many mineral elements, especially iron, iodide and calcium. The plant also contains proteins (34%), fat (0.3%), and vitamins A, B, C and K. It is a rich source of lutein and □-carotene among the carotenoids identified, as well as chlorophyll, oxalates, starch and fibres.
- **Pharmacological action**: Spinach eases digestion and stimulates stomach and liver secretions. It is used for jaundice, the lungs, and as a chest tonic. It is important food for convalescence, anaemia, debility, permanent exiguity and feeble memory. Phosphorus salts' availability in the plant is good for intellectuals, intensive thinking and memory work; it is also useful for big cities poisoned by pollution. Spinach is good food for children since it is rich in iron and other mineral salts. It stimulates the pancreas, and is cardiotonic and antiscorbutic. Cooked leaves are a laxative, and cure throat catarrh and chest inflammations. Leaves also cure gallbladder ailments, fevers, jaundice and are diuretic. Green leaf bandages are used for wasp stings, and remove swelling and congestion.
- **Other uses**: A vegetable crop, it is consumed in salads and its oil is used in cake and pastries, and as a juice. The plant is also used in cleaning black wool fabrics.
- **Caution**: Feeding on spinach may enhance the formation of kidney stones because of its calcium oxalate content. Therefore it is not allowed for kidney stone patients.

- **Arabic name**: Lailak
- **Scientific name**: *Syringa vulgaris* L.
- **Common name**: Lilac
- **Family name**: Oleaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Leaves, fruits, and bark.
- **Chemical constituents**: Glycoside, syringin, syringopicrosid, syringopicrin (bitter substance), essential oil and farnesol. Phenylpropanoids in leaves, flavonoids, oxycinnamic acids, coumarins, alkaloids, tannic substances, saponins, iridoids, amino acids, starch, and lignans and secoiridoids in the bark, including oleuropein, desmethyloleuropein, ligustroside, and nuezhenide. In the bark, phenolic compounds include syringin, coniferin, tyrosol, 3,4-dihydroxyphenylethanol, salidroside, (3,4-dihydroxy-□-phenylmethyl)-●-□-D-glucopyranoside, acteoside, forsythiaside, esculetin and astragalin. Secoiridoid glycosides and echinacoside from the white flowers, and flavonoids from violet flowers, as well as rutin and kaempferol-3-O-rutinoside.
- **Pharmacological action**: Syringin is a hypotensive. Tinctures expressed neurotropic activities. The leaves and fruits are antiperiodic, febrifuge, tonic and vermifuge. The bark or leaves are chewed for sore mouths, and may be used as an aloe substitute and as a cure for malaria. They are also used for gemmotherapy or drainage therapy from the body. Buds, shoots or rootlets are used for the removal of toxic compounds.
- **Other uses**: It is an ornamental plant in gardens.
- **Caution**: No reports.

Flowers

Flowering branches

- **Arabic name**: Qodsiyah, Mukhmalia Muntashira
- **Scientific name**: *Tagetes patula* L.
- **Common name**: Tiger-Eyes, Dwarf Marigold, French Marigold
- **Family name**: Compositae / Asteraceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: The whole plant, leaves, oil, and plant apex.
- **Chemical constituents**: Monoterpenes, sesquiterpenes, α-terthienyl, lutein esters.
- **Pharmacological action**: It is an aromatic, astringent, digestive, diuretic and sedative plant. Internally, it is used for indigestion, intestine and colon colic, severe constipation, coughs and dysentery. Externally, the plant is used for sore eyes, ophthalmia, rheumatism, flatulence, skin diseases and hepatic disorders.
  In folk medicine, the flowers are used for colds, cough and ailments. It has a very odd perfume, and is antifungal and used for smelly feet. The juice of aerial parts is anti-bleeding while the whole fermented plant has insecticidal effects.
- **Other uses**: It provides an additive of a natural yellow colour.
- **Caution**: This is a genus in which the essential oil of some species may contain estragole and/or thiophene derivatives (e.g. alpha terthienyl) that induce phototoxicity in humans and animals. Exposure to plants' juice or sap may produce skin rashes or irritation. Skin wounds can be extremely painful, causing large blisters and skin burning.

Plants with different flower colours

- **Arabic name**: Tamir Hindi, Urdaib, Hommer
- **Scientific name**: *Tamarindus indica* L
- **Common name**: Tamarind
- **Family name**: Leguminosae / Fabaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Fruit, fruit pulp, fresh stem bark, and fresh leaves.

pods

- **Chemical constituents**: The sweet-sour fruit pulp contains citric, tartaric, maleic and tannic acids, saponin, protein, fat, carbohydrates, alkaloids, potassium citrate, sesquiterpenes, fibre and ash. Tannins, alkaloids and phenolics. Polysaccharides, polyphenolic, phlobatannins, xyloglucan and mineral elements are in the fruit.
- **Pharmacological action**: The plant is carminative, febrifuge, antioxidant, laxative, tonic, anthelmintic, antimicrobial, antiseptic, antiviral, astringent, and a blood purifier. It is used for boils, asthma, conjunctivitis, gonorrhoea, haemorrhoids, inflammation, constipation, bone fracture, fever, nausea and is antibilious. It is also effective against bacterial skin infections, chest pain, cholesterol metabolism disorders, colds, colic, diabetes, diarrhoea, dysentery, dry eye and inflammation, gallbladder disorders, gastrointestinal disorders, gingivitis, indigestion, jaundice, keratitis, leprosy, liver disorders, vomiting, paralysis, poisoning, rashes, rheumatism, sore throat, sprains, sunscreen, sunstroke, swelling (joints), urinary stones and helps with healing wounds.Tamarind in milk at a rate of 1:4 is useful in overcoming excessive stomach acidity. The fruit is said to cure intestinal ailments and is effective against scurvy. It is a common ingredient in cardiac medicines and it is used as a decoction with potash for stomach disorders, general body pain, and as a blood tonic and skin cleanser.

  In folk medicine, its fruit's juice is used for coughs, gastric problems, and cardioprotective activity. Tamarind lowers blood sugar levels in tested animals. Xyloglucan and hydrolyzed xyloglucan have been shown to improve lipid metabolism and reduce the weight of adipose tissue.
- **Other uses**: The pod is delicious and, with its sticky, sour-sweet pulp, is used as a flavour in food and drinks. The tender pods can also be eaten as a vegetable, cooked or pickled. The fruit is used in sauces, syrups and processed foods, and the pulp is used for confectionery and as an ingredient in curries, chutneys, preserves, pickles, sherbets and beverages. Tamarind seed xyloglucan is used as a sauce thickener and in ice cream, and as a gelling agent for food dressings and processed vegetables. Xyloglucan hydrolyzates exhibit plant growth-

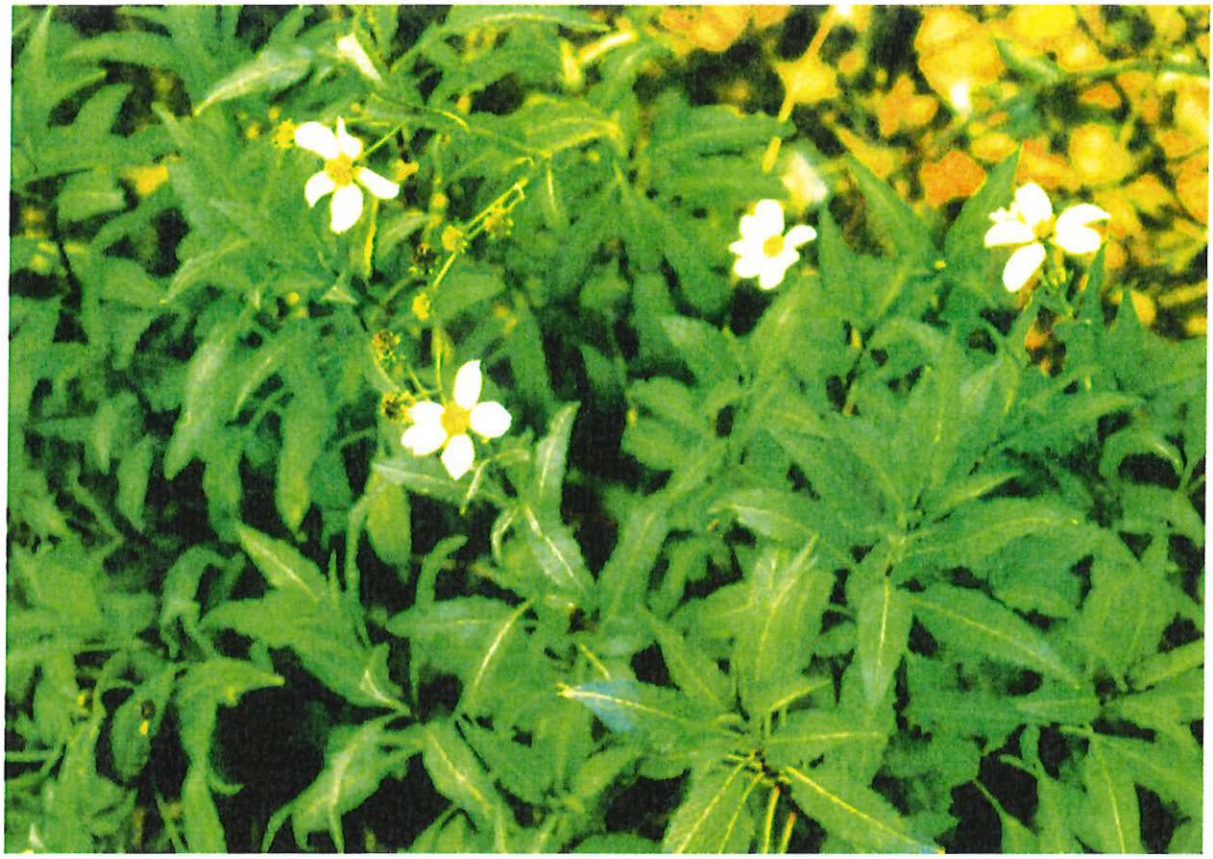
promoting activity that resembles that of auxin. As a natural dye and kernel powder compound it is applied to food, textiles, coatings, and pharmaceuticals. Tamarind fruit is rich in mineral elements, and contains high levels of phenolics. Seed gum is useful as a natural food additive, a food colouring and preservative and as an insecticide.

❖ **Caution**: No reports.

Flowering branch

- **Arabic name**: Tecoma
- **Scientific name**: *Tecoma stans* (L.) Kunth
- **Common Name**: Yellow Bells, Yellow Elder, Trumpetbush, Yellowbells, Ginger-Thomas
- **Family name**: Bignoniaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Leaves, flower, seed, fruit, bark, and root.
- **Chemical constituents**: Tannins, flavonoids, alkaloids including 5-β-hydroxyskitanthine, quinines, saponins and amino acids. Other constituents include phytosterols, monoterpenes, triterpene, glycosides, phenols, tannins, coumarins, sesquiterpene lactones, esteroles, metilesteroles, carbohydrates and unsaturated compounds. Indole and anthranilic acid are present in the leaves.
- **Pharmacological action**: The plant is a powerful diuretic, vermifuge, tonic, antioxidant, anti-inflammatory, antimicrobial, antispasmodic and wound healer. It cures diabetes, digestive problems, and stomach pains, and controls yeast infections,
  In folk medicine, almost all plant parts are of medicinal value and are traditionally used for the treatment of various ailments including reducing blood glucose. The bark is a smooth muscle relaxant, mild cardiotonic and has chloretic activity. The root is reported to be a powerful diuretic, vermifuge and tonic. Ground root and lemon juice are reportedly used as external applications and are also taken internally in small quantities as a remedy for snake and rat bites.
- **Other uses**: It is an ornamental plant. Its roots are used in making beer.
- **Caution**: No reports.

Plants with different flower colours



- **Arabic name**: Shayi
- **Scientific name**: *Thea* sinensis (Syn. *Camilena sinensis* L.)
- **Common name:** Tea
- **Family name**: Theaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Leaves
- **Chemical constituents**: Flavanols, flavanol-3-ols leucoanthocyanine. In leaves, protein, fat, carbohydrate, ash, caffeine, tannin, polyphenols, fluoride, catechins and gallic esters, including epicatechin, epicatechin gallate, and epigallocatechin gallate. Vitamins B_1, B_2, B_3, B_5, B_6 and C, calcium, sulfur, iron, phosphorus, potassium, rubber, starch, flavon glycosides (mainly crestin and kaempferol), alkaloid compounds including caffeine, theophylline, pectin, maleic acid, amino acid, fat, essential and fixed oils. The volatile oil is made from thujone, fenchone, caryophyllin, boeboil, limonene, pinen, camphor and myricin. The plant contains mucilage, flavonoids, gallotannic acid, tannic acid, gallic acid, cetone and starch.
- **Pharmacological action**: Tea as a drink is analeptic, tonic, emollient, anti-thirst and helps digestion. It is used for sunstroke, is antipyretic, is useful for headaches resulting from exhaustion and hard work and is a tranquillizer because of the caffeine. It is a cardiotonic because of the tiphlafen, which is a diuretic material. Tea as a drink is used for dysentery, diarrhoea, and cancer diseases because of its astringent tannins. A tea infusion is used as a wash to cure sunburn resulting from arthritis. It is also used for eye diseases, swellings and headaches.

  A remedy available as a tincture is an anti-ageing antioxidant compound containing green tea extract. Drinking tea protects against certain cardiac diseases and tooth decay, because of the naturally occurring fluoride.

  The leaves are cardiotonic, diuretic, stimulant and astringent. They exert a decided influence over the nervous system, giving a feeling of comfort and exhilaration.

  Externally, young leaves and leaf buds are used as a poultice or wash to treat cuts, burns, bruises, insect bites, ophthalmia and swellings.

  Tea is used for hepatitis and gastroenteritis. It is widely drunk in many areas of the world. Green tea is made from steamed and dried leaves, whilst black tea is made from fermented and dried leaves. Tea contains polyphenols, which are antioxidants that help protect the body against heart diseases, strokes and cancer. However, cold tea is sometimes used as a soaking liquid to flavour dried fruit.

- **Other uses**: The leaves are infused in hot water and used as a drink, commonly known as tea. Catechins differ slightly in their chemical structure from other flavonoids, but share their chemoprotective properties. All are found in green tea, and are believed to be responsible for the protective benefits of this beverage. Edible oil is obtained from the seed but it needs to be refined before being used. An essential oil is distilled from the fermented dried leaves and is used as a food flavouring.
  The tea is used in colouring, colour fixation and hair colouring, and therefore is added to henna powder for colour fixation because of its tannin content. Cubical tea extract may be used in the food industry as a colouring and flavouring agent in sweets, jelly, alcoholic and non-alcoholic drinks.
- **Caution**: Tea is rich in tannin and is a possible cause of esophagal cancer. Caffeine, theophylline, and epigallocatechin gallate are of hepatotoxic concern. Hepatotoxicity is associated with supplements containing Chinese green tea (*Camellia sinensis*). An excessive intake of tea causes dizziness, constipation, palpitations and insomnia.

In the field

Camelina sinensis grown as an ornamental plant

- **Arabic name**: Dafl
- **Scientific name**: *Thevetia nerifolia* L.
- **Common name**: Thevetia
- **Family name**: Apocynaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Bark and latex.
- **Chemical constituents**: Thevitin alkaloid, cardenolides, cardiac glycosides, saponins, triterpenoids.
- **Pharmacological action**: The plant is used for intermittent fevers, and is emetic and cathartic. The thevitin compound is cardiotonic but in its natural form is highly toxic in all plant parts, especially in the seeds. The roots and leaves are used for coughs, and skin and urinary system diseases.
- **Other uses**: It is an ornamental plant.
- **Caution**: The plant should not be used directly by patients since it contains cardiac glycosides and aglycones such as thevetoside.

- **Arabic name**: Afs Sharqy, Thuya
- **Scientific name**: *Thuja orientalis* L.
- **Common name**: Oriental Arborvitae, Eastern White Cedar, Northern White Cedar, Yellow Cedar, Tree of Life, Arborvitae, Swamp Cedar
- **Family name**: Cupressaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Fruits, dry cones, vegetative branches and the tiny, flat, scale-like leaves.
- **Chemical constituents**: Volatile oil (1%) that is rich in monoterpene hydrocarbons, the major constituents of which are α-pinene (64.2 and 49.3%, respectively, in cones and needles), β-phellandrene (6.7–9.6%) and α-cedrol (3.9 and 8.2%). In addition, thujone, fenchone, caryophyllene borneol, limonene, camphor, □3-carene, □-terpinene, p-cymene, camphene, myrtenol, myrcene and alloaromadendrene are present. The acids in oils are palmitic, stearic, C_{18} and C_{20} acids and linoleic acid. Pinipicrin, resin and a bitter principle are also present. The plant contains flavones glycosides, mucilage and flavonoids in the bark. Tannin, gallotannic acid, tannic acid, gallic acid, some starch, some calcium salts, and cetone. Lipids, diterpenoids, pimaric and isopimaric acids, and aliphatic compounds. It also contains octyl undecanoate, 12, 13-epoxyheptacosane, 1-hexanol pentanoate-1-ol, 1-dodecanol undecanoate-1-ol and 1-nonanol hexadecanoate-1-ol, mucilage and tannin.
- **Pharmacological action**: It is a nerve stimulant, and also stimulates the uterus and heart muscles, counteracts irritation, and is anti-asthmatic, antibacterial, antipyretic, anti-tussive, aperients, astringent, diuretic, emmenagogue, emollient, expectorant, haemostatic, lenitive, a parasiticide, sedative and stomachic.
  Thuja is used in pill or liquid form for irritability, depression, sadness, impaired thinking, headache, warts, tumour, growths, rashes, runny nose, nose sores, mouth pain, toothache, gases, haemorrhoids, watery stool, benign prostatic hyperplasia, gonorrhoea, backache, myalgia, arthralgia, tiredness, insomnia, fevers, shaking chills and cancer.
  Toothpaste containing plant extracts is used for controlling grey hair. Its essential oil has antimicrobial effects, and seed lipids are antibiotic.
  Thuja orientalis oil, leaf extracts, glycerol, azone and perfumes inhibit obesity. Bud powder is used in fungal infections, and skin ulcers and fruits cure diarrhoea and chronic coughs. Thuja tincture is used to destroy skin

nails, and the fruits are diuretic and stop bleeding. Thuja is used for cystitis, bed wetting, and arthritis, and it is anti-inflammatory and kills parasites.

Plant extracts are indicated for use against bronchial catarrh, enuresis, cystitis and psoriasis. They have also been used for amenorrhea, rheumatism and carcinoma. Extracts can also be used to treat cardiac debility and may be used for infectious skin diseases including impetigo or scabies.

Herbalists prescribe *Thuja* to treat viral and bacterial infections, coughs, respiratory ailments, strep throat and respiratory distress related to congestive heart failure. The plant is an astringent, cleans the blood, reduces inflammation, and cleans the body. Thuja treats herpes sores, induces abortions and is used in hair-growing agents. Thuja ointment is applied to the skin for ailments such as eczema, vaginal infections and muscle aches.

- **Other uses**: Thuja acid is effective in controlling domestic mites like *Dermatophagoides pteronyssinus* and *D. farinae*. Its aqueous extract inhibits the production of aflatoxin in the stored grains of many crops. The essential oil showed antifungal activity against *Alternaria alternata* in a direct bioautography assay. Essential oils also showed herbicidal activity against different weed species. Thuja is also an ornamental and fence plant.
- **Caution**: The plant contains thujone which is toxic in excess doses, leaves are toxic if digested, and the oil is abortifacient and convulsing; it is not for use by pregnant women or anyone with a dry, irritant cough, which indicates a stagnant mucus condition of the lungs. It is also not to be used in cases of diarrhoea. The essential oils of *Thuja* leaves can cause death, and it is never to be used for internal medication because of the seton. The use of *Thuja* fruits in high doses causes abortion. Thujone is a strong provocative and causes muscle convulsion and liver bleeding.

Fruiting stage

- **Arabic name**: Za'atar Sori, Za'atar Farisi
- **Scientific name**: *Thymus syriacus* Boiss.
- **Common name**: Syrian Thyme
- **Family name**: Labiatae / Lamiaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: Leaves and flowering heads.
- **Chemical constituents**: Essential oil contains about 55% phenols, including thymol, carvacrol, luteolin, ■-pinene, □-pinene, p-cymene, linalool, □-caryophyllene and cymol. Terpinene and p-cymene were found at high concentrations in young leaves and mature leaves are rich in thymol and carvacrol.
- **Pharmacological action**: The plant is carminative, anti-tussive, expectorant, bactericidal, anthelmintic, astringent, antispasmodic and antiseptic. It is used for respiratory system problems, chest and lung disorders, as a stimulant for blood circulation, as a tranquillizer, and it cures coughs, sore throats, colds and helps people to get to sleep. It is effective against ancylostoma worm and whooping cough. Its resins strengthen muscles, are antisclerotic, expel harmful body salts, and kill amoeba and colon and tuberculosis microbes.
  The plant cures back ailments, lung inflammations, asthma, and liver and gallbladder congestion. It is useful in dissolving kidney stones, and in women's diseases, calming menstruation ailments and disorders and breast ailments.
  Phenolic compounds, thymol and carvacrol possess strong anti-oxidant properties. Thyme has anti-cancer activities, which may support immunological functions and overcome fatigue and physical weakness. It is an antimicrobial, antibacterial, antifungal, and antiviral and works as a uterotonic, neurotonic, and cardiotonic. It is used for abdominal colic, bronchitis, coughs and in after-childbirth treatment.
- **Other uses**: Tea can be prepared from thyme. It is a medicinal plant for honeybees, and is used as a decorative plant and as a sweet-smelling ground cover. The volatile fractions of essential oils showed antifungal activities against soil-borne pathogens.
- **Caution**: Chemicals of concern in the herb's essential oil are carvacrol (37%), camphor and eucalyptol, which may cause irritation.

- **Arabic name**: Nankhwa Hindi
- **Scientific name**: *Trachyspermum ammi* (L.) Sprague
- **Common name**: Bishop's Weed, Ajowan, Ajwain, Ajowan Caraway, Carom Seeds, Thymol Seeds
- **Family name**: Umbelliferae / Apiaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Fruit and seeds.
- **Chemical constituents**: Alpha-pinene, beta-pinene, calcium, camphene, carvacrol, chromium, fibre, limonene and thymol. Seeds contain essential oil, and fatty acids including myristic, palmitic, palmitoleic, stearic, petroselinic, oleic, and linoleic.
- **Pharmacological action**: The plant is used for giddiness, antilithic and alopecia. Seeds are used against diarrhoea, dysentery, flatulence, cholera, painful micturition, lumbago, colic, indigestion, bronchitis, asthma, common colds and coughs. The seeds are stimulants and are useful in counteracting spasmodic disorders, and for treating leucorrhoea and impotency. Seed oil is aromatic, carminative, antibacterial, and vermifuge. It is useful for rheumatism, cramps, dyspepsia, hysteria, antiseptic, and gastritis, and it enhances the appetite and cures urinary problems. It shows inhibitory effects on hepatitis C virus protease and inhibits snake and scorpion venoms. The volatile oil is good for circulation and muscular problems.
- **Other uses**: The plant is used as a spice in pickles. The seeds may be eaten with betel leaves.
- **Caution**: It causes slight toxicity, especially in cases of sensitive skin.

Plants in the field

- **Arabic name**: Hulbah, Muzaiqa, Hulba Romeiah, Hulwa, Hilbah
- **Scientific name**: *Trigonella foenum-graecum* L.
- **Common name**: Fenugreek
- **Family name**: Leguminosae / Fabaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Mature seeds, sometimes young soft leaves and veins that are edible fresh or in salads.
- **Chemical constituents:** Mature seeds contain alkaloids, mainly trigonelline and choline. Gum (28%), protein (22%) and fixed oil (6%). Seeds are rich in sugars, fats, salts of iron, calcium, phosphorus and others, vitamins B, C and D, mucilage, *Trigonella* oil, nicotinic acid and tannins. The plant also contains polysaccharide galactomannan, saponins such as diosgenin, yamogenin, gitogenin, tigogenin, and neotigogens, mucilage, volatile oils, alkaloids such as choline and trigonelline, cinnamon and sapogenins phenolics. The essential oil of the aerial parts is made from □-cadinene, □-cadinol, □-eudesmol and □-bisabolol, steroid saponin, galactomannan and 4-hydroxyisoleucine. Flavone and its glycoside, triterpene, coumarin, organic acid and grease are also present.
- **Pharmacological action**: Fenugreek is stomachic, tonic, diuretic, enhances appetite, restorative, emmenagogue, lactagogue, aphrodisiac and demulcent. It is used for anaemia, asthma, skin and bone care, coughs, diabetes, fevers, hair and cures tuberculosis. It is also recommended for hepatic and splenic disorders, thalassemias, Wilson's disease, leukaemia, haematological malignancies, and as an adjuvant to cancer therapy. Pounded seeds are applied to bruises, swellings, boils, ulcers, alopecia, dyslactea, dyspepsia, hypercholesterolemia, leukorrhea, micromastia, abdominal colic, bronchitis, puerperium, allergies, digestion, emphysema, headaches, migraines, intestinal inflammation, lungs, mucus membranes and sore throat.
  Internally, fenugreek is a blood purifier if drunk in the morning and before breakfast; it also cures chronic coughs, and is a hypoglycaemic.
  Externally, fenugreek is used as a poultice for different festers and abscesses, and cures some skin diseases such as erupted dry skin, eczema, burns, furuncles, gout, myalgia and rheumatic pains. A fenugreek decoction encourages body fatness, helps wound healing in diabetics, and is used as a gargle for tonsillitis and diphtheria. A decoction is given to teenage girls to stimulate menstruation; it is also useful for body weakness and anorexia, and a seed decoction is used for erupted skin washing. It is used for fevers and is a sedative.

Fenugreek is used for pleurisy, stomach catarrh, constipation and haemorrhoids. Seeds are tonic to the digestive system and galactagogue. The oil is anti-allergy and useful for nose congestion.

The herb extract is included in a composition-based anti-diabetic cosmeceutical cream product, and is a health food, antioxidant and anti-ageing material. Seeds are carminative, antipyretic, anthelmintic and useful for dropsy, heart diseases, piles and smallpox.

Traditionally, the plant is used for the treatment of worms, to disperse colds, and to alleviate pain and has a healing effect on joint pains. It is also used for stomach upsets and weight loss. A seed tea is a tonic, and treats various kidney ailments and abdominal illnesses. It is widely used to strengthen pregnancy and is currently available commercially in encapsulated forms, which are prescribed as dietary supplements for the control of hypercholesterolemia and diabetes by practitioners of complementary and alternative medicine. Capsules of seed extract containing amino acids, trigonelline, and galactomannan fibre showed anti-diabetic activity.

Plant leaves are used both internally and externally to reduce swelling, prevent alopecia and treat burns.

In folk medicine, seed oil is reported to aid digestion, work for the relief of inflamed tissues, relieve congestion, reduce inflammation and fight infection. It alleviates coughing, stimulates perspiration to reduce fevers and is beneficial for treating allergies and bronchitis. It aids with diabetes and lowers blood pressure. It increases lactific nursing, helps with the growth of breasts and increases weight. It resists swellings, especially gastrointestinal cancer, skin cancer, and rectum and uterus cancer. It reduces sugar and cholesterol levels in the blood, and is useful for disorders such as diarrhoea, menses, difficulty in passing water, inflammations of the throat and bladder, and coughs. It also works well on skin inflammations, burns, and fissures, and activates contractions of the uterus during childbirth.

- **Other uses**: Soft fresh pods and young shoots are used raw and in dough stuffing. Seeds have a pungent maple aroma and flavour, and are used in curries, imitation maple syrup and baked goods. Fenugreek mucilage is used for solids' removal from tannery effluent and as a flocculant for tannery wastewater treatment. Seed powder is added to dried meat as a preserving agent against insects, and soft pods and young stems are used fresh or in pastes. Seeds are used as a spice in packed materials and drinks.
- **Caution:** Fenugreek causes myopathy in ruminants. The odour of all plant parts may clearly appear through the skin through perspiration and thus cause some inconveniences. The plant is a uterus stimulant and therefore should be avoided by pregnant women. Persons who use insulin must consult a medical doctor before the plant is used as it is hypoglycaemic.

In the field

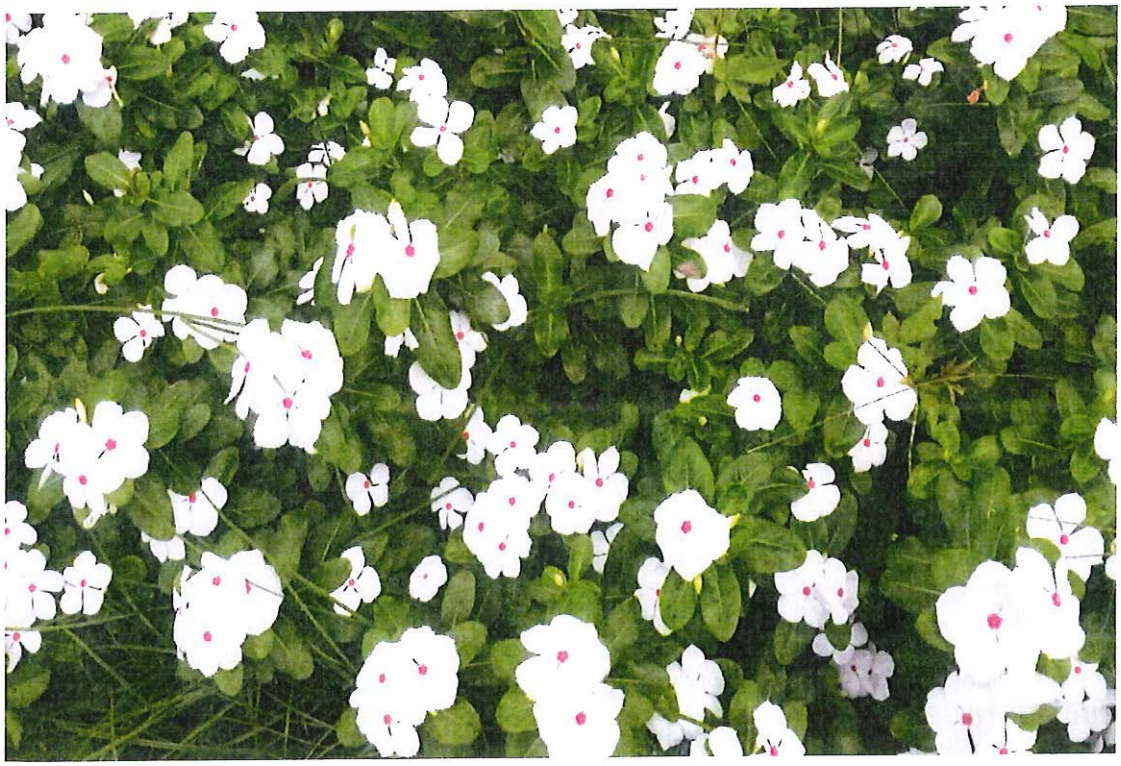
- **Arabic name**: Kbusin Kabeer, Abu-Khanjar, Tartur Albasha
- **Scientific name**: *Tropaeolum majus* L.
- **Common name**: Indian Cress, Nasturtium
- **Family name**: Tropaeolaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: Seeds, flowers, leaves and fresh plant juice.
- **Chemical constituents**: Volatile oil, lipoprotein, lipids, phenols, glucotropaeolin that upon hydration gives antiseptic materials including mustard oil, fatty oil (up to 20%), and fatty acids including palmitic, meristic, and lauric. It also contains wax, protein, anthocyanins, antioxidants and glucosinolate in leaves.
- **Pharmacological action**: The plant is used as an anti-chronic and for a persistent inflammation of the urinary system, as an antimicrobial and diuretic, and against colds, influenza and constipation. A plant infusion is used for toothache, and flowers, leaves and fresh plant juice are used for bronchial pneumonia. Seeds are strong depuratives for bacteria such as *Salmonella, Staphylococcus,* and *Streptococcus*, and are used in cases of chronic urinary tract infections and chronic bronchitis, usually as a powder. Plant juice has the same effect.
- **Other uses**: It is a common ornamental plant in gardens. Immature seeds, fresh leaves and inflorescence are consumable, and give a mustard taste to salads. The opened flowers are also added to salads, as they are appetitic, and flowering buds are pickled in vinegar and used as a caper substitute for flavouring sauces and savoury dishes.
- **Caution**: No reports.

- **Arabic name**: Ghurghur, Durdar Asghar
- **Scientific name**: *Ulmus campestris* L.
- **Common name**: Common Elm
- **Family name**: Ulmaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Leaves, buds, and pods.
- **Chemical constituents:** Ulmin, resin, sterin, tannin, and mucilage.
- **Pharmacological action**: The plant is astringent and acts against skin diseases, mainly eczema, arthralgia and rheumatism.
- **Other uses**: It is a forest and ornamental plant.
- **Caution**: No reports.

- **Arabic name**: Foul, Fool
- **Scientific name**: *Vicia faba* L.
- **Common name**: Broad bean
- **Family name**: Leguminosae / Fabaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: Pods, seeds, and flowers.
- **Chemical constituents**: Protein (10%), fat materials (4%), carbohydrates (14.6%), fibres (4%), and mineral elements including calcium, phosphorus, iron, sulfur, vitamin B, haemoglobin, gelatine, and lecithin.
- **Pharmacological action**: Flowers and green pods are diuretic and cure urine sands. Cooked fruit and seed peel provide vitamins and prevent constipation. The seedpods are diuretic and lithotriptic.
- **Other uses**: Broad bean seeds are rich in nutrients and are used in food. The immature, small and tender seeds can be eaten raw; as they grow older they can be cooked as a vegetable. Young pods are cooked as a vegetable, though they quickly become fibrous and have a hairy coating inside that can become unpleasant as the pods get larger. However, they can be eaten roasted or boiled, and popped seeds can also be salted and eaten as a snack or roasted like peanuts. Mature seeds are consumed after being cooked as a vegetable or added to soups or in a rice mixture, or may be dried and ground into a flour for use in making bread with cereal flours. The seed can be sprouted before being cooked. Young leaves are very nutritious and can be cooked like spinach. Broad bean is a food and feed crop. A fibre is obtained from the stems. The burnt stems are rich in potassium and can be used in making soap.
- **Caution**: It advised that those who suffer from a weak stomach, dyspepsia and intestinal inflammations should peel the seeds before consuming them.
  Although seeds are consumed in food, reports indicate that feeding on the seeds of this plant can cause 'favism' in susceptible people, and pollen grain inhalation can also cause the disease. Favism, which is a severe haemolytic anaemia due to an inherited enzymatic deficiency, only occurs in cases of excessive consumption of the raw green seeds, and its onset is more rapid when consumption occurs from plants in a field where both seeds and pollen jointly cause the disease.

- **Arabic name**: Winkka, Unakia
- **Scientific name**: *Vinca herbacea* Waldst and et Kit.
- **Common name**: Periwinkle, Vinca
- **Family name**: Apocynaceae
- **Growth habit**: Sub-Shrub
- **Life cycle**: Perennial
- **Part/s used**: Flowering stems.
- **Chemical constituents**: Alkaloids, tannin, saponins, pectin, organic pigments, derivatives similar to reserpine, finkrastein, fenblastein, vinleurosine and vinrosidine.
- **Pharmacological action**: Some plant preparations are used for heart arrhythmia. Some plant species inhibit the growth of certain cancers since they form a complex cytoalkaloid to treat certain cancers. It is sold by herbalists for nose bleeding, gums, diarrhoea, cough, stomatitis, and gynaecology. Seeds improve men's potency. The plant is tonic, astringent, hypotensive, vasodilating and diuretic.
- **Other uses**: An ornamental plant.
- **Caution**: It is a genus in which some species may contain indole alkaloids, e.g. vincamine. All plant parts are toxic, and should not be used for self-medication but only under full medical supervision. Plant ingestion may cause some minor symptoms such as rashes, vomiting or diarrhoea, although the eating of small amounts may not cause any symptoms.

Vinca major



Plants with different flower colours

- **Arabic name**: Hurjaya Itriya, Banafsaj
- **Scientific name**: *Viola odourata* L.
- **Common name**: Sweet Violet
- **Family name**: Violaceae
- **Growth habit**: Herb
- **Life cycle**: Perennial
- **Part/s used**: The whole herb.
- **Chemical constituents:** Violine alkaloid, glycoside, salicylic acid glycoside, violarutin, methyl salicylate, saponins, eugenol, ferulic acid, kaempferol, quercetin and scopoletin.
- **Pharmacological action**: It is a medicinal and food plant; its leaves and flowers are made into a jelly drug form, mainly for respiratory system problems such as coughs and pharyngitis. The violine is emetic. The root contains an emetic alkaloid called violine. A root decoction is a laxative and the plant oil is an antiseptic, diuretic and diaphoretic.
  The tea made from the entire plant is used to treat digestive disorders and the presence of a glycoside of salicylic acid (natural aspirin) is used for headaches, body pains and as a sedative.
  The plants' constituents are promising in the treatment of many kinds of cancer, arthritis, AIDS, gum disease and other troubles.
  Externally, the fresh chopped green leaves reduce swelling and soothe irritations. As a bath additive, the fresh crushed flowers are skin soothing and the aroma is very relaxing.
  In folk medicine, the plant is used as a symbol of potency and love. It was recommended for use as a garland worn about the head to ward off headaches and dizzy spells. It is a soothing agent, skin conditioner, calming, balances perfume, expectorant, diuretic, antirheumatic and anti-inflammatory. Its oil is used for stomach and intestine inflammations and respiratory system disorders. It is also used for acne.
- **Other uses**: It is an ornamental plant, the flowers of which are edible and used as food additives, in salads, made into jelly, and candied for decoration. Its oil is used in valuable perfumes and cosmetics. It is also made into jelly and sweets.
- **Caution**: Large doses of the plants must be avoided because of its saponin content, as a result of which it causes vomiting. The plant may be toxic to animals.

- **Arabic name**: Hurjaya, Banafsag Thulathi Al-Alwan
- **Scientific name**: *Viola tricolour* L.
- **Common name**: Wild Pansy, Heart's Ease, Love-in-Idleness, Jack-Jump-Up and Kiss-Me.
- **Family name**: Violaceae
- **Growth habit**: Herb
- **Life cycle**: Annual or Perennial
- **Part/s used**: Flowering stems, leaves, roots of flowering plant and the whole plant.
- **Chemical constituents**: Volatile oil is mainly made from methyl-ether-salicylic acid, salicylates, violine (similar to emetin), alametin, viroxanthin and uroxanthin, vitamin C (exhibits emetic and cathartic actions at high doses), mucilage, beta-carotene, and salicylic acid (similar to aspirin). Cyclotides (an important family of cyclic peptide molecules, including kalata B_1 and kalata B_2 that have potentially wide-ranging uses in medicine and agriculture). The cyclotides and related macrocyclic peptides such as scaffolds are used in drug design and saponins (soap-like molecules that act as emollients, expectorants, and surfactants). Phenolic glycosides (molecules composed of sugars bound to phenol residues, often act as antimicrobials). Flavonoids (flavonol aglycons, flavone-and flavonol-glycosides, rutin, arbutin, known for their antioxidant and membrane-stabilizing effects), salicylic acid derivatives, terpenes, triterpenes and triterpene saponins, steroids, carbohydrate derivatives, polysaccharide and Mg tartrate, ascorbic acid, pigments, tannins, phenolic acids and rutin (0.13% in leaves) are present in the aerial parts. The plant also contains polysaccharides, anthocynin-glycosides such as violanine, organic pigments and violaxanthin esters. Lanolin is found in the flowers and alkaloids including violo-emritine are in the roots.
- **Pharmacological action**: The plant is an expectorant, general stimulant, anodyne, antioxidant, anti-asthmatic, diuretic, diaphoretic, tonic, anti-inflammatory, cardiac, demulcent, depurative, laxative and vulnerary. It is a blood purifier, and is used for dropsy, respiratory and eye problems, and for various chest complaints such as bronchitis and whooping cough. It is useful for treating cystitis, syphilis, rheumatism, strangury and bed-wetting. Historically, it was used for epilepsy, asthma and a wide range of other complaints. It is a component in cosmetics and hair shampoos, in drugs used to treat internal skin inflammations as a gargle, poultices, and bath preparations for wounds and boils. The plant's formulations are used for cough treatments. Aerial plant parts are useful in curing cancers, mainly of the breast and lung.

Leaf baths are used in cases of skin diseases such as elephantiasis and eczema. Stems and leaves are occasionally used in ointments to treat skin rashes like eczema and skin consumption. The root is an emetic and a homeopathic remedy.

A plant infusion is used for urinary disorders, and as a sedative and anti-asthmatic, and plant extracts are used for skin diseases such as itching. Extracts are also useful for gout, cystitis, prostatic inflammation, and enuresis, and are included in cosmetic compositions and drugs for the treatment of endogenous allergic dermatoses. Its impregnate is used for fever and urine disorders. The oil is used for headaches, and is commonly used in perfumes and fragrances; it is also used for skincare, especially scarfskin. The plant's decoction is an anti-tussive for children.

- **Other uses**: It is a very attractive garden plant with a slightly lavender-like fragrance, and yellow and purple flowers.
- **Caution**: Strong doses may cause vomiting and allergic skin reactions because of its saponin content. Ingestion may cause some minor symptoms such as rashes, vomiting or diarrhoea. The ingestion of small amounts may not cause any symptoms at all.

- **Arabic name**: Karma, Enab
- **Scientific name**: *Vitis vinifera* L.
- **Common name**: Grape
- **Family name**: Vitaceae
- **Growth habit**: Shrub
- **Life cycle**: Perennial
- **Part/s used**: Fruits and leaves.
- **Chemical constituents**: Grape contains sugars (up to 27%) including fructose and glucose. Organic acids (2.5%) include maleic, tartaric and some oxalic and salicylic, vitamins B and C, mineral elements, quercitin and glycosides. Fruit peel contains tannins, pigments, lipids, formic acid and agol enocarbol. In seeds, there is fixed oil, tannin, lecithin, vaniline and flupafenan. Leaves contain sugars (2%), inosine, quercitin, coline, betaein, maleic acid and tartaric acid.
- **Pharmacological action**: Fruits are a general tonic, used for stomach and intestinal diseases, spasmodics resulting from constipation and for bleeding. They are also used for anaemia and bronchitis. A seed decoction is diuretic and leaf powder is useful for uterine bleeding. Leaves' tea is also diuretic and astringent. It is recommended for dysentery, epilepsy and jaundice.

  Grape is a cure from sand, epilepsy, and kidney diseases and constipation. Seed oil removes blackness and wrinkles from around the eyes, builds and renews cells and helps to cure acne, rashes and other skin problems. Grape juice is used against hypertension, is useful for chest disease, is diuretic, and is a stomach cleaner and disinfectant. It dilutes uric acid and overcomes constipation, is used for face washing and is an emollient. Grape vinegar is a body tonic and anti-cough.

  Grape is also a digestive, nerve tonic, antiseptic, cholagogue, and useful against anaemia, bone debility, liver and spleen disorders, gout, toxification, and enteritis. Fruits or leaves poultices cure skin purulences, bronchitis and earache. Cosmetic compounds contain natural antioxidants that include grape seed extract. Extracts are also used for the prevention and treatment of inflammation and metabolic diseases. A medicinal herbal tea product has been developed in which grapes are the main ingredients, reducing blood cholesterol levels and affecting adult diseases such as hypertension and obesity. Grape seeds are rich in chemicals protecting LDL against oxidation, and hair-growth stimulant compounds containing grape extracts are also produced.

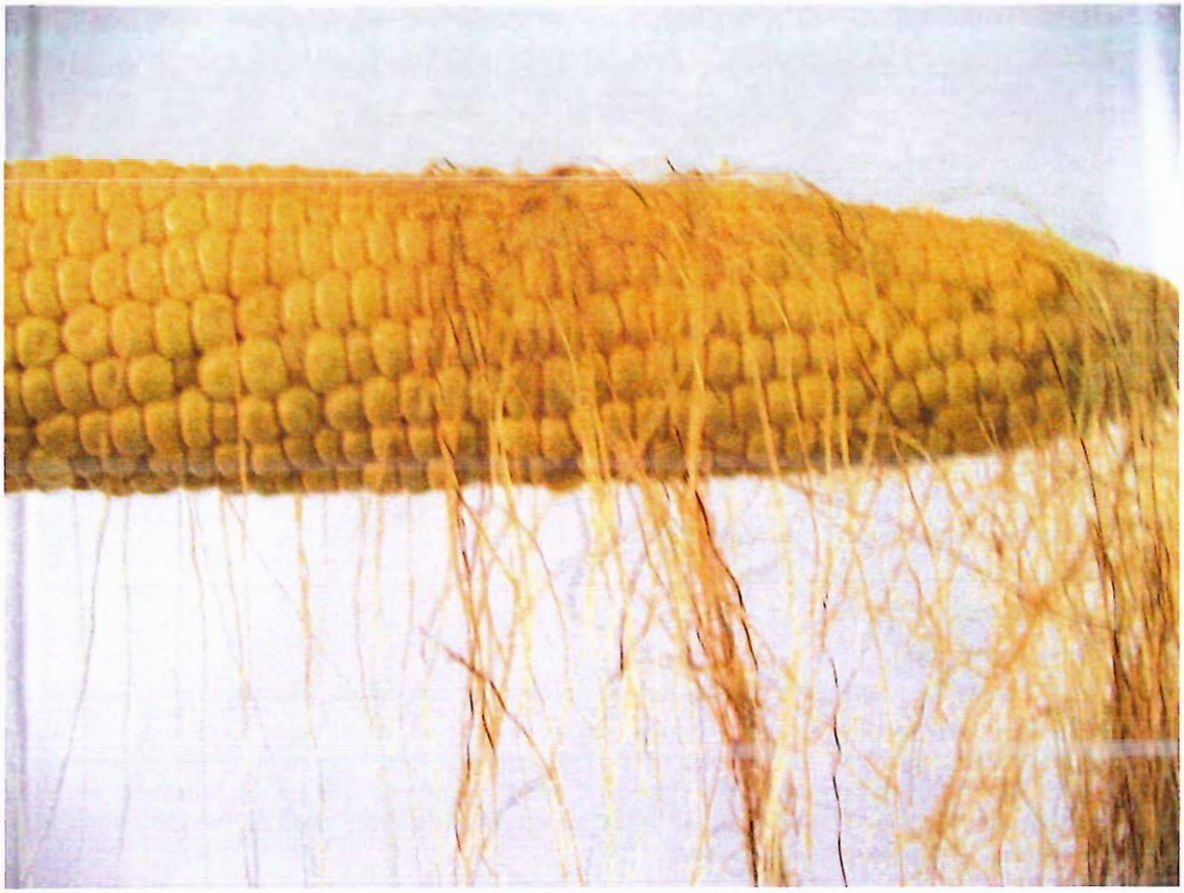
In folk medicine, grape seed oil is used to remove blackness and wrinkles around the eyes, regenerate cells, and to help cure acne, boils and other skin problems. The oil is applied in a thin layer on the dry, aged skin and around the eyes.

- **Other uses**: The tea and grape seed extracts can be used to retard lipid oxidation in a variety of food products. Grape leaves are eaten after being rolled around rice and mincemeat and cooked. They are also useful as an astringent because of their vitamin C content. Seed oil is not liable for oxidation or spoilage and is suitable for cooking. Fruits are eaten fresh or in jam.
- **Caution**: No reports.

Grape fruits

- **Arabic name**: Thura Hulwa, Thura Safra, Thura Shami, Thura Neeli
- **Scientific name**: *Zea mays* L.
- **Common name**: Indian Corn, Maize, Corn
- **Family name**: Gramineae / Poaceae
- **Growth habit**: Herb
- **Life cycle**: Annual
- **Part/s used**: The whole plant, stamens, female flowers filaments before pollination, cone filaments and oil.
- **Chemical constituents**: Saponins, tannins, sugars, volatile oil, resin, bitter compounds and mineral salts. Fruits contain starch (65-70%), proteins (10-12%), fatty oil (7%), vitamins A, C and, E, and organic acids. Salts, fatty oil, glycosides, saponins, vitamins C and K, pantatonic acid, inoside, sitosterol and stigmasterol are in the filaments. Ferulic acid and more importantly isosorbide dinitrate, which exhibit vasodilating properties, and allantoin are in the seeds.
- **Pharmacological action**: Corn is considered as the best sedative and an effective diuretic. The stigma is diuretic and its decoction is used for urinary system ailments.
  Cone filaments are diuretic, cholagogic, cardiotonic and hypertensive. They are used for kidney and bladder disorders, arthritis and rheumatism, liver and gallbladder diseases and bile secretion. Their infusion is used for chronic cystitis, sand and albuminic urination. Cornmeal was used as the basis of poultices for headaches, and can be mixed with onion for pneumonia, infused and drunk for stomach problems, and is also used for gravel, sore throat and cough treatments. It is composed of vinegar and mustard. A corn decoction or infusion is used for severe kidney colic and stones, rheumatism and gout. The infusion is a mild hypotensive and detoxicant. The plant is a source of vitamin E.
  The oil is a food and drug, protective, used in arteriosclerosis, and reduces cholesterol levels in the blood. It is also used for dandruff. Corn starch is used for chapped skin and bee stings. The stigma "silk" of the corn is dried and made into a tea for complaints of the urinary tract, such as kidney stones. Ground and boiled corn sweetened in milk is used to treat diarrhoea and dysentery in children. Cornhusk tea is used to bring out the rash of measles. Warm corn whiskey is effective for colds. It is used as a remedy for warts.
  Leaves and roots decoctions are used in the treatment of strangury, dysuria and gravel. The corn silks are a cholagogue, demulcent, diuretic, lithontripic, mildly stimulant and vasodilatory. They are used for diabetes mellitus as well as cystitis, gonorrhoea, and gout, and are diuretic. A decoction of the cob is used in the treatment of nose bleeds and menorrhagia. The seed is diuretic and a mild stimulant. It is a good emollient poultice for ulcers, swellings and rheumatic pains, and is widely used in the treatment of cancer, tumours and warts. It contains the wound-healing substance allantoin. The plant is said to have anticancer, hypoglycaemic and hypotensive properties.

- **Other uses**: Maize starch can be made into plastics, fabrics, adhesives, and many other chemical products. Maize plastic is a substitute for plastic used in cars' spare parts. The maize plant is animal feed. Seeds may be converted into flour as a source of maize starch, oil and fuel. Maize oil mixed with flax oil is used in paints, rubber, soap and dyes. Synthetic alcohol is isolated from maize starch, the seeds are used in alcoholic drinks, the fibres are used in paper and mattresses, internal membranes are used in cigarettes and the stem pulp is used in crackles.
- **Caution**: Xanthostrumarin is a toxic material that causes weakness and vomiting, reduces temperature and causes convulsions. The plant contains cynogenic glycosides and nitrate at especially high levels at the pre-flowering stage.



The maize cone

The mature fruits

- **Arabic name**: Enab Mazroo'i
- **Scientific name**: *Zizyphus jujuba* Mill.
- **Common name**: Jujube, Common Jujube
- **Family name**: Rhamnaceae
- **Growth habit**: Tree
- **Life cycle**: Perennial
- **Part/s used**: Stem bark and fruits.
- **Chemical constituents**: Saponins, flavones, sugars, starch, vitamins A, B_2 and C, minerals including calcium, iron and phosphorus, mucilage, pectin, jujube acid, triterpenes in fruits, cyclic peptide-alkaloids and jujubogenin glycosides. Volatile materials are present in the fruits, jujubocide A and B in seeds and palmitoleic acid isomers in lipids. Flavonoids, swertisin, puerarin, 6'''-feruloylspinosin, apigenin-6-C-□-D-glucopyranoside, spinosin, jujubogenin glycosides, 5b-triterpenoids are in fruits and cyclopeptide alkaloids, flavonoids, jujubosides A and B are in the seeds. The isomers of palmitoleic acid in lipids and volatile substances are in the fruits, as is cis-9-octadecenoamide (oleamide).
- **Pharmacological action:** Spinosin and swertisin possess significant sedative activity. It is included in a compound for preventing or treating dementia and treating cardiovascular diseases in a mixture with other plants. Jujube is a beverage for fatigue recovery, and is effective in enhancing muscle performance and in the treatment of insomnia, nyctalopia, and diarrhoea.
  The active component identified as cis-9-octadecenoamide (oleamide) suggests that oleamide should be a useful chemopreventive agent against Alzheimer's disease.
  Cosmetic compositions contain anti-radicalizing agents, and are included in compositions useful for skin care, teeth bleaching, the prevention of vomiting after drinking, the stimulation of hair growth, and the re-movement of keratin. The fruits are food for growth promotion. Hair tonics contain hair growth stimulants and plant extracts. Jujube extract is an astringent and its sap has blood soothing acidity.

Jujube is used for coughs, colds and body devotion; it is an astringent, and cures constipation, dysentery and urinary system disorders. It is useful for kidney and bladder pains. Jujube is a good cure for throat diseases, mainly hoarseness, bronchitis and throat catarrh. It is used as a sedative, anti-tussive and is useful for chest problems and as a diuretic. It is anti-spasm, eases birth, and is used for arthritis, varicose veins, lower back pain, rheumatism, stomach acidity, blood cycle weakness and as a blood cleanser, cardiac diseases, and anti-filament worms.

In folk medicine, jujube oil alleviates scars and stretch marks when used as emollient for the skin. A few drops may be rubbed into the hair as hot oil for damaged hair.

- **Other uses**: It is a fruit tree and an ornamental plant on roadsides. The fruits are eaten fresh. Leaves contain saponins and may be used in detergents and soap.
- **Caution**: No reports.

The plant with mature fruits

From Al-Salt historical places

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http://www.issg.org/database/species/ecology.asp?fr=1andsi=365
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http://www.pfaf.org/user/plant.aspx?LatinName=Chenopodium+album
http://www.pfaf.org/user/Plant.aspx?LatinName=Chenopodium+vulvaria
http://www.pfaf.org/user/Plant.aspx?LatinName=Dactylis+glomerata
http://www.pfaf.org/user/Plant.aspx?LatinName=Digitaria+sanguinalis
http://www.pfaf.org/user/Plant.aspx?LatinName=Ecbinops+ritro
http://www.pfaf.org/user/Plant.aspx?LatinName=Juncus+acutus or
http://www.hear.org/pier/wra/australia/junsp-wra.htm (*Juncus acutus*)
http://www.reefnet.gov.sy/reef/index.php?view=articleandcatid=58%3Aprotectionandid=534%3A2008-08-11-09-25-01andtmpl=componentandprint=1andpage=andoption=com_contentandItemid=150
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GLOSSARY OF MEDICAL TERMS

Abdominal colic: Intense cramping or colicky pain, which may be accompanied by nausea and vomiting.
Abortifacient :A material that causes abortion.
Acne: An inflammatory follicular, popular and pusular eruption involving the sebaceous apparatus.
Acute and chronic pancreatitis: Acute pancreatitis is an inflammatory condition of the pancreas that is painful and at times deadly. Chronic pancreatitis is long-lasting inflammation of the pancreas. It most often happens after an episode of acute pancreatitis.
Adaptogen: Having substances that increase the body's own response to oxidative stress (a phenomenon that is not conclusive by receptor theory).
Adrenal gland stimulant: Stimulates the adrenal gland to release its hormones at a faster rate.
Alkaloids: A hetero-group of basic materials that consist of nitrogen-containing ring compounds, secondary compounds (not primary) to a plant's life but which are found in plants and usually have strong medicinal activities.
Allelochemicals: Secondary metabolites produced by certain plant species and have inhibitory or stimulatory effects on the same or other plant species or microorganisms.
Alopecia :An organic disease that causes temporary hair loss.
Alterative: A medicinal substance that acts gradually to nourish and improve the system.
Amenorrhea: Delayed menstruation.
Anaesthetic: Pertaining to, characterized by or producing anaesthesia.
Analeptic: Stimulates the central nervous system; acts as an antispasmodic and anticonvulsant; and improves breathing by stimulating the respiratory muscles.
Analgesic (Anodyne) :A material that reduces, relieves or eliminates pain.
Anaphordisiac :A material that reduces potency.
Anemia: Blood deficiency resulting from a reduction in blood red cells' number or amount of oxygen that carries the hemoglobin into these cells.
Angina pectoris: A sudden severe ailment in the centre of the chest resulting from a deficiency in blood supply to the heart.
Anodyne: Soothes and relieves pain.
Anorexia: An eating disorder characterized by markedly reduced appetite or a total aversion to food. It is a serious psychological disorder.
Anthelmintic (Vermifuge): Expelling or destroying parasitic worms, especially of the intestine.
Anti neuralgia: A substance that removes nerve ailments
Antiallergic: Against immunologic response in a susceptible person to exposure to an allergen.
Anticarcinogenic: Acting as an anti-neoplastic agent, it acts against metabolites, alkylating agents, plant alkaloids (inhibit cell division), antibiotic, and taxanes (stabilize the mototoc spindle).
Anticoagulant: Prevent clotting of blood. Any substance which prevents blood coagulation.
Anticonvulsant: Agent preventing or arresting convulsions. It suppresses the rapid and excessive firing of neurons that start a seizure.
Antidepressant: Drugs used in the treatment of depressive illness, which include tricyclic compounds (amitriptyline, imipramine).
Antidiabetic: A substance that prevents or cures diabetes.
Antidiarrhoea :A plant that cures diarrhoea because of its contents from relatively contracting materials that stop diarrhoea.
Antidote: A material that causes detoxification.
Antiemetic: Prevents or alleviates nausea and vomiting.
Antilithic: Reduces and suppresses the formation of urinary calculi (kidney stones) by dissolution.
Antimicrobial (vs. Antibacterial): Prevents the growth of bacteria, fungi, and some viruses.
Antinociceptive: Inhibits nociception, the sensation of pain.
Antiphlogistic: An agent that reduces or counteracts inflammation.
Antipyretic (Febrifuge): A medicine that lowers body temperature to prevent or alleviate fever.
Anti-rheumatic: Suppresses manifestations of rheumatic disease
Anti-scrofulous: Prevents or relieves scrofula, a tuberculosis infection of the lymph nodes that is most often caused by the bacterium *Mycobacterium tuberculosis,* which can be spread through the inhalation of contaminated air.
Antiseptic: A material that kills or inhibits the growth of diseases caused by bacteria and other germs.
Antispasmodic: Relieves or prevents smooth muscle spasms.
Antitussive: A plant that prevents, suppresses or removes coughing.
Anxiety: Feeling of apprehension from the anticipation of danger, which may be internal or external.
Anxiolytic: Inhibits anxiety.

Aperient: Having a mild laxative or purgative effect without purging; a mild bowel stimulant.
Aperitive: Stimulates appetite.
Aphrodisiac: An agent that is alleged to increase libido or the duration of sexual activity.
Apoptotic: Effects in colorectal cancer cells.
Appetite: An agent that strengthens the stomach and stimulates its active releases; it is used as a strong appetizer.
Aqueous: An extract obtained from a plant or a plant part by steeping it in water.
Aromatherapy: The treatment of worry or nervousness, or medical conditions that are not serious, by rubbing pleasant-smelling natural oils into the skin or breathing in their smell: aromatherapy massage or aromatherapy oils.
Aromatic oil: An oil of aromatic smell and pleasant taste and mostly volatile.
Aromatic plant: A plant that contains materials of aromatic smell and pleasant taste.
Arrhythmia: Any deviation from a natural status of the heart.
Arteriosclerosis: Overall results of deteriorating defects that affect veins and result in sclerotic sides.
Arthralgia: Pain in the joint.
Arthritis: Joints inflammation that are characterized by swellings, sclerosis and pain with reduced motion.
Ascites: Accumulation of free fluid in the peritoneal cavity. It causes abdominal distention with fullness of flanks.
Asthenia: Loss of strength; disability.
Asthma: Alteration in breath restrictions, rapid breathing associated with disturbance in blood circulation and mucus membrane releases of respiration tracts.
Astringent: A binding agent that contracts organic tissue, reducing secretions or discharges of mucus and fluid from the body.
Barrenness: Sterile, incapable of producing offspring.
Bedwetting: Enuresis, urinating that occurs while someone (such as a child) is sleeping in bed.
Benign prostatic hyperplasia: A non-malignant enlargement of the prostate due to an excessive growth of the prostate tissue, present in elderly males as nocturia; difficulty in urination and diminished force of the urinary stream.
Biliousness: A disorder of the liver characterized by nausea, abdominal discomfort and constipation.
Bioactive: Interaction with, or effect on, any cell tissue in the human body.
Bitter (Appetizer): A plant that contains bitter materials stimulates the appetite and affects the secretions of the gall bladder.
Bitter tonic: Acts on mucus membranes of the mouth and stomach to stimulate the flow of saliva and gastric juices that promote digestion; used for a temporary loss of appetite.
Blistering: An elevation of the epidermis conaining fluid.
Boil: Infection of a hair follicle by staphylococci. It is characterized by redness, swelling, heat and tenderness.
Bone resorption diseases: It is a resorption of bone tissue, that is, the process by which osteoclasts break down the tissue in bones and release the minerals, resulting in a transfer of calcium from bone tissue to the blood.
Bronchitis: Inflammation of the respiratory tract that is characterized by coughing and mucus secretion.
Bruises: Superficial injury. It is an injury that appears as a purple mark on the body, although the skin is not broken.
Cancers: Diseases caused by diorders or defections in cells' functions that can affect tissues and spread in the body in different shapes, and mostly cause death.
Caoutchouc: An elastic material obtained from the latex sap of trees (especially trees of the genera Hevea and Ficus) that can be vulcanized and finished into a variety of products.
Carbuncles: Large multilocular boil of the skin and deeper tissues. It terminates in a slough and suppuration. It is associated with systemic manilestation.
Carcinogenic: Any substance or agent that tends to produce a cancer.
Cardiac: Any material that affects the heart.
Cardioprotective: Protect heart from being attacked by diseases or other factors.
Cardiotonic: A plant that contains materials affecting the heart's function.
Cardiovascular diseases: Diseases that affect heart and blood vessels such as a collapse resulting in a sudden loss of effective blood flow.
Carminative: An agent for easing griping pains, colic and expelling gas from the intestines. It relieves gas and gas pain in the bowels.
Cataplasm: A poultice or plaster. A soft moist mass, often warm and medicated, that is spread over the skin to treat an inflamed, aching or painful area, to improve the circulation, etc.
Cataract formation: A cataract is a clouding of the lens in the eye which leads to a decrease in vision or opacity of the lens of the eye, its capsule or both capsulars.
Catarrh: The release of a thick nasal mucus from mucus membranes in the nose and throat.
Catarrhal disorders: Catarrh is a disease of the mucus membrane of the nasal passages and those cavities of the head communicating with them. Insignificant as it appears in its first stages, it is apt in its progress to become instrumental in causing the loss or impairment of smell, taste, hearing and sight, and of creating serious constitutional derangements, not infrequently terminating in consumption.
Cathartic: Cleansing the bowels, promoting evacuations by stool, purgative.
Cellulitis: Inflammation of the skin and tissues beneath it from a bacterial infection.

Central nervous system: The part of the nervous system that contains the brain and spinal cord.
Cervical cancer (Neck cancer): Cervical cancer affects the entrance to the uterus (womb). The cervix is the narrow part of the lower uterus, often referred to as the neck of the womb.
Cholecystitis: Inflammation of the gall bladder. Cholecystitis refers to a painful inflammation of the gallbladder's wall. The disorder can occur a single time (acute), or can recur multiple times (chronic).
Choleretics, Cholagogues: Materials that either stimulate gallbladder productions or are released in the gall and pancreas glands in the duodenal part.
Chronic myelogenous leukemia (CML): A persistent blood cancer. It is an uncommon type of cancer of the blood cells.
Chronic pancreatitis: An inflammation of the pancreas that does not heal or improve – it gets worse over time and leads to permanent damage.
Chronic: Chronic disease that associated with very slow changes or a disorder that persists for a long time.
Colic: Painful and abdominal spasmodic.
Cologne: A type of perfume, a liquid that smells good and is meant to be dabbed behind the ears.
Coma: A case of very deep and long unconsciousness.
Conjunctivitis: Inflammation of the mucus membrane that covers the eye's front part and lines in the eyelid.
Constipation: The rare expelling of feces from the intestine for an unusually long period.
Convulsion: Very strong contractions in muscles.
Cornea: The transparent outer covering of the eye that protects the front of it.
Corns: Small calloused areas of skin caused by local pressure irritating tissue over a bony prominence. Corns most commonly occur over a toe where they form what is referred to as a hard corn. Between the toes, pressure can form a soft corn of macerated skin which often yellows.
Cramp: Spasmodic and painful contractions in muscles.
Cutaneous diseases: Skin diseases
Cystitis: Inflammation of the bladder, usually caused by a bladder infection.
Cytotoxic: Inhibition of cells' functions; the destruction of cells or their functions are caused by antibodies or by toxins.
Dandruff: An excess amount of scaly material composed of dead keratinized epithelium shed from the scalp.
Decoction: An extract of soluble substances in water of a medicinal plant. It is a medicinal preparation.
Demulcent: A medication (in the form of an oil or salve, etc.) that soothes inflamed or injured skin. It relieves inflammation by soothing irritated membrane.
Deodorant: A substance which suppresses or neutralizes bad odour such as lime or bleaching powder.
Depression: A reduction in the level of body functions or nerve activity because of a certain agent.
Depurative: An agent which is able to purify the blood or the humors (body fluids).
Dermatophytosis: Infection by fungi that lives on keratinous structures and can infect the epidermis, the hair and the nails.
Detersive: Relating to or having detergent or cleansing activity; a **detersive** agent.
Diabetes: A defect in carbohydrates' metabolism, no sugar oxidation occurs in the blood for energy release because of a reduction in the insulin hormone.
Diaphoretic: An agent that promotes perspiration.
Digestive: An agent that aids digestion.
Discutient: Uncertain; any agent or process that disperses a tumour or lesion or causes the dispersal or disappearance of a pathological accumulation (tumors).
Disinfectant: A material that kills bacteria and other germs.
Diuretic: Tending to increase the secretion and discharge of urine.
Dropsy (edema): A severe accumulation of liquid in the body tissues.
Drowsiness: Almost falling asleep.
DuctbBile: The duct that carries bile and pancreatic juice to the duodenum.
Duodenal ulcer: Ulcer in the first part of the duodenum. Sores in the mucus membrane of the duodenum intestine result from digestive acidic extract.
Dysenteric: A disease caused by amoeba that contaminates food and water, resulting in bleeding with feces and a clear difficulty in controlling the feces.
Dyspepsia: Indigestion.
Dyspnea: Difficulty or laboured breathing; it is a subjective complaint.
Dystonia: A movement disorder in which muscles contract uncontrollably. The contraction causes the affected body part to twist involuntarily, resulting in repetitive movements or abnormal postures.
Dysuria: Difficulty or pain in urination.
Eczema: Dermatitis, associated with itching, redness and weeping.
Elephantiasis: Enlargement and thickening of tissues.
Emaciation: Loss of weight associated with meagerness.
Emetic: An agent that causes vomiting, in which the stomach is emptied of its contents.
Emmenagogue: An agent that promotes menstrual flow. It also called a hemagogue.

Emollient: Substances resembling cream that have a soothing and moisturizing effect when applied to the skin or an irritated internal surface.

Emphysema: Inflation, abnormal distension of an organ or part.

Endorphins: Endogenous opiod peptides such as endorphin, leuencephalin, met-encephalin and dynorphin that are produced in the brain and help in controlling responses to pain and stress and improve mood. Endorphins promote overeating.

Enteritis: Inflammation of the intestines and especially of the human ileum.

Enuresis: Incontinence of urine. Involuntary urination, which may be caused by a variety of factors. These include disorders of the kidneys, bladder, or ureter and/or poor control of the muscles that control the release of urine.

Epilepsy: A sensory case characterized by an unexpected emergent phenomenon of severe symptoms combined with a temporary signal of a large number of nerve cells that release its electrical charges once.

Essence: A solution of aromatic oil in alcohol.

Essential oil: Volatile oil found in aromatic plants and contains terpinoides.

Estrogenic: An excitant sex hormone. Any of several major female sex hormones produced primarily by the ovarian follicles of female mammals, capable of inducing estrus, developing and maintaining secondary female sex characteristics, and preparing the uterus for the reception of a fertilized egg; used, especially in synthetic form, as a component of oral contraceptives, in certain cancer treatments, and in other therapies.

Ethanol-induced gastric ulcers: Ethanol-induced damage to the gastrointestinal mucosa causes changes in the structure of the gastroduodenal mucosa and an increase in lipid peroxidation, which may be due to the generation of oxygen-free radicals following ethanol administration as causative factor in these lesions.

Expectorant: Substance that induces the ejection of mucus, phlegm, and other fluids from the lungs and air passages by coughing or spitting.

Extract: Concentrated formulations of the active ingredients of plant or animal drugs obtained by evaporation of the drug solution in water, alcohol or ether.

Eye bath: A substance used to wash off any infections or other materials from the eye and help rapid recovery.

Fatigue: A state of exhaustion.

Fatty (Fixed) oil: A natural plant or animal nonvolatile oil which is a mixture of fatty acid esters.

Febrifuge: Abates and reduces fevers.

Fever: An abdominal elevation of the body temperature to above 37.7°C in a resting person.

Fistulas: An abdominal passage from the internal organ to the body surface or between two internal organs.

Flatulence: Gas generation in the stomach and intestines.

Flavonoids: A group of plant metabolites; polyphenolic molecules, soluble in water, that create antioxidant effects through the activation of cell signalling pathways.

Fluid retention: Congestion of the gallbladder, causing the yellow digestive peptic to be retained inside and not released.

Food poisoning: Occurrence of a rapid onset of vomiting, profuse watery diarrhea and abdominal pain after the ingestion of preformed bacterial toxins elaborated by certain microbes.

Fractures: Injury to a bone wherein the continuity of the bone is broken. It is characterized by pain and tenderness, deformity in the form of swelling, shortening or angulation and loss of function.

Galactogogue: An agent which promotes milking in nursing mothers.

Gallstone: A solid mass from the cholesterol, a yellow dye and calcium salts formed in the bladder or duct bile.

Gargle: A liquid drug placed in the mouth for certain period and is swilled from one side to another, and can also be placed in the throat.

Gastric, intestinal ailments: Stomach and intestines are irritated and inflamed.

Gastritis: Inflammation of the stomach wall.

Gastroenteritis: Gastritis or fine intestine that usually causes vomiting or diarrhea.

Gastrointestinal disturbances: Stomach and intestine disturbance.

Genitalia: The organs of reproduction, especially the external organs.

Germicide: A material that kills bacteria and other microorganisms.

Gingivitis: Inflammation of the gums usually caused by poor dental hygiene.

Glaucoma: A condition that causes damage to eye's optic nerve and gets worse over time. It is often linked to a buildup of pressure inside the eye. It tends to be inherited and may not show up until later in life.

Gleet: Chronic acute inflammation.

Glycoside: A group of substances in the plant that contain carbohydrates particles (sugar) that are liable to be transferred by hydration into sugar and non-sugar materials. Glycosides have toxic side groups, secondary compounds (not primary) to a plant's life

Gonorrhea: A sexually transmitted disease predominantly affecting the lower genital tract, rectum and conjunctiva.

Gout: A food metabolism disease that is described by painful inflammations of certain joints resulting from the salt deposit of uric acid in these joints.

Gravel: A small stone formulated in the urine duct and deposited with urine.

Haemolysis: Breakdown of the blood red cells.

Hallucinogen: A material that causes hallucination.

Heart arrhythmia: Loss or an irregularity of cardiac rhythm.

Hematophage insects: Insects feeding on blood.
Hematuria: Presence of blood cells in urine.
Hemolytic: Effects, factors or substance that cause blood liquefaction.
Hemorrhagic disorders: A group of conditions that result when the blood cannot clot properly. In normal clotting, platelets, a type of blood cell, stick together and form a plug at the site of an injured blood vessel.
Hemorrhoids (Piles): Enlarged (varicose) veins in the wall of the anus.
Hepatic: Acting on or occurring in the liver.
Hepatitis: An inflammation of the liver cells and damage to the liver. There are different types and causes, but the symptoms can be similar.
Hepatoprotective: A substance or a drug that protects the liver from hepatitis disease.
Hepatotoxic: Toxic substances that destroy liver cells.
Hepatotoxicity: Liver cells' destruction by a toxic substance.
Herbal compress: A dry, moist, hot or cold poultice with or without medical materials applied and pressed on the infected part of the body.
Hernia: Abdominal protrusion of an organ or structure through a defect of a natural opening found in a covering membrane, muscle or bone.
Herpes: Inflammatory disease characterized by small vesicles in clusters caused by herpes viruses.
Hiccup: Spasms of the diaphragm usually due to irritation in the upper abdominal area.
HIV-1 virus: Abbreviation for human immune-deficiency virus
Hoarseness: Having a rough, harsh quality of voice.
Homeopathy: A system of medical practice that treats a disease, especially by the administration of minute doses of a remedy that would in larger amounts produce in healthy persons symptoms similar to those of the disease.
Hormone: A material that is produced in the body by an organ or cell in the organ and translocates to another organ to cause its regulatory effects.
Hydrophobia: An acute viral disease of the nervous system of warm-blooded animals (usually transmitted by the bite of a rabid animal); rabies is fatal if the virus reaches the brain.
Hypersensitivity: Abnormal sensitivity to any stimulus exhibiting an excessive response.
Hypertensive: Marked by increased blood pressure. An individual with abnormally high blood pressure.
Hypnotic (Soporific): A material that causes sleep.
Hypoglycemic: Abnormal decrease of sugar in the blood.
Hypokalemia: Hypopotassemia; an abnormally decreased level of potassium ions in the blood circulation.
Hypolipidemic: Decreased lipid concentration in the blood.
Hypotensive: Agents causing diminished tension or pressure in a person.
Hypothalamus: A small area of the brain that helps to stimulate key functions. For example, it helps to regulate temperature and weight.
Hypothyrmia: Depression of the spirits.
Hypothyroidism: A condition due to deficient secretion by the thyroid.
Immunomodulatory: Having the ability to alter or regulate one or more immune functions, i.e. the stimulation of antibody formation or the inhibition of white blood cell activity.
In vitro: Outside the living body and in an artificial environment.
In vivo: Inside the living body of a plant or animal.
Inappetence: Anorexia, lack or loss of appetite.
Inflammatory: Pertaining to or marked by inflammation.
Influenza (Flu): Viral infection affecting the respiratory tract.
Infusion: Extraction of the water soluble constituents of a medicinal plant by raising the temperature up to its boiling point. The medical preparation can be obtained by this method.
Inhalation: A smelling material for curing the respiratory system and made from essential oils or well distributed solutions or fine powders taken through the nose.
Insecticide: A material that kills insects.
Insomnia: Chronic inability to sleep or staying awake for a long period.
Intraocular pressure: Pressure within the eyeball.
Irritant: A material that causes tissue agitation.
Ischemia: Deficiency of blood supply to an organ or tissue.
Jaundice: Liver inflammation that causes congestion and body yellowing in general.
Laryngitis: Inflammation of the mucosa lining larynx that causes hoarseness.
Laxative (Aperient or Aperitives): An n agent that stimulates the evacuation of soft, formed stools.
Lenitive: A medicine or application that has the quality of easing pain or protecting against the action of irritants.
Leprosy: Hansen's disease; a chronic granulomatous infectious disease caused by *Mycobacterium leprae*.
Leucodermia: Local or total absence of pigmentation in the skin.
Leucorrhea: White discharge from the vagina.
Leukemia: Blood cancer disease.
Liver meridian: Rises up the medial sides of the legs from the big toes. The liver meridian passes up to the liver. From the liver it passes up through the lungs, up the throat to the nasal pharynx. A branch splits and rises to

the top of the forehead and to the top of the head. It then goes down around the spine into the sacrum-coccyx; this is the du mai. It passes inside and spirally wraps the yin organs.

Lotion: A medical liquid for external uses.

Lues: An old name for syphilis, a sexually transmitted disease (STD) that has been around for centuries and is caused by Treponema.

Lung disorders: Any problem in the lungs that prevents the lungs from working properly.

Lyme disease: Also known as Lyme borreliosis, this is an infectious disease caused by bacteria named *Borrelia* spread by ticks.

Lymphocytic leukemia: An uncontrolled proliferation and accumulation of mature B lymphocytes. The symptoms result from bone marrow failure.

Maceration: Softening of a solid material by soaking in water.

Massage: An old and modern curing method used in the bath, for which the patient sits in the hottest place in the bath and on a hot stone or plate. Once excessive perspiration has started, the patient can then be massaged using a rough cloth garment.

Mastitis: Inflammation of the breast.

Mediastinal edenopathy: Mediastinum crunch; a substemal crepitant sound audible in mediastinal emphysema.

Medicated plaster A medical mixture in a paste form that can be applied to the infected body parts and stuck on at body temperature.

Melanoma: Vitamin tumor is a type of cancer that develops from the pigment-containing cells known as melanocytes. Melanomas typically occur in the skin, but may rarely occur in the mouth, intestines, or eye.

Melliferous: Yielding or producing honey.

Menopausal syndrome: The cessation of menstrual activity which occurs between the ages of 45 and 50, characterized by menstrual irregularity, hot flushes, irritability, increased weight, osteoporosis and atrophy of female tissues.

Menstruation: Monthly period in women that is associated with the excretion of large amounts of blood from the uterus.

Metabolism: The ultimate physical and chemical operations that occur in the body and help its continued growth and function.

Metastases: Distal spread of a malignant cell either through the blood or a lymphatic vessel along a serosal membrane.

Migraine: A pain and headache in the half of the head that is associated with disturbed sight and nausea.

Molluscicides: A chemical used to kill or control snails and slugs, some of which are intermediate hosts of parasites of medical importance to man.

Mucilage: A gelatinous complex carbohydrate that is released from certain plant species.

Mucous membrane (Mucosa): The moist membrane that encloses many ducts and niches in the body including the digestive and resperatory channels.

Mucus: Fine secretion that protects mucus membrane that mainly contains glycoprotein.

Muscle relaxant: Any drug which relaxes the muscles and may be used to treat muscle spasms and muscle pain.

Myalgia: Pain in the muscles or within muscle tissue.

Myopathy: Any abnormality of the muscular tissue, especially involving the skeletal muscles.

Myopia: Short sight in which parallel rays entering the eye focus in front of the retina.

Narcotic: A drug which relieves pain and induces sleep when used in medicinal doses.

Nausea: The condition of feeling sick and of needing to vomit.

Nephritic: Renal, referring to kidneys or to diseases of the kidneys.

Nephritis: Kidney inflammation.

Nervine: A substance which has the quality of acting upon or affecting the nerves or the nervous system, having a soothing or calming effect and calming the nervous excitement.

Neuralgia: Pain occurring along the nerve or severe pain in the course of the distribution of a nerve due to irritation or damage to a nerve.

Neuroprotective: Serving to protect neurons from injury or degeneration.

Neurotransmitter: A chemical that is released from a nerve cell which thereby transmits an impulse from a nerve cell to another nerve, muscle, organ, or other tissue. A neurotransmitter is a messenger of neurologic information from one cell to another.

Nociceptive: Capable of appreciation or transmission of pain.

Numbness: No feeling in some part of the body. One might, for example, experience numbness in the foot after sitting with it tucked under leg for an hour, and it can also be a symptom of various illnesses and conditions.

Nyctalopia: A condition of the eyes in which vision is normal in daylight but abnormally poor at night or in a dim light.

Ophthalmia: Inflammation of the conjunctiva or the eyeball.

Ophthalmic: Relating to or situated near the eye.

Optic nerve: Either one of the second pair of cranial nerves, consisting of sensory fibers that conduct impulses from the retina to the brain. The optic nerve carries the impulses formed by the retina, the nerve layer that lines the back of the eye.

Osteoporosis: Thinning of the bones, with a reduction in bone mass, due to the depletion of calcium and bone protein.

Paget's disease: A chronic disease of the bones. It is a chronic bone disorder disease that is characterized by inflammation, enlargement and deformation due to the excessive breakdown and formation of bone tissue that can cause bones to weaken and may result in bone pain, arthritis, deformities or fractures.

Palpitation: An unusually or abnormally rapid or violent beating of the heart.

Paralysis: Paralysis that affects the body's side or other part of the body.

Parkinson's disease: A case of nerve loosening or relaxation that causes a loss of control and results in the continuous uncontrolled motion of some organs such as hands, foot, head and eyes.

Paste: An old form of drug; the medical substance is placed on a paste spread over or a cloth garment or leather and then placed on the tumours or places of ailments or congestions in order to degrade or relieve them.

Pectin: A group of acidic polysacharides found in plants that form jelly with sugar in normal conditions.

Pectoral: A medicine for diseases of the chest organs, especially lung diseases.

Pectoral: Something worn on the breast.

Pellarge: A disease marked by dermatitis, gastrointestinal disorders, and mental disturbances, and is associated with a diet deficient in niacin.

Peptic ulcer: The removal or scarification in the mucus membrane enclosing the digestive tract because of acidic digestive secretion.

Pericarditis: Inflammation of the pericardium, two thin layers of a sac-like tissue that surround the heart, hold it in place and help it work. A small amount of fluid keeps the layers separate so that there is no friction between them.

Periodontitis: Inflammation of the supporting structures of the teeth and especially the periodontal membrane.

Pharyngitis: An inflammation of the pharynx, which is in the back of the throat. It is most often referred to simply as a "sore throat." Pharyngitis can also cause scratchiness in the throat and difficulty swallowing.

Phlebitis: Inflammation of a vein, often occurring in the legs and involving the formation of a thrombus, characterized by swelling, pain, and change of skin colour.

Phlebotonicum: Phlebotonics increase the tone of the venous wall by stimulating the circulation of blood.

Phlegm: Thick mucus in the nose and throat secreted in the respiratory passages and discharged through the mouth, especially that occurring in the lungs and throat passages and produced when one has a cold.

Pimples: A small, usually inflammatory swelling or elevation of the skin; papule or pustule.

Pineal and pituitary glands: The pineal gland, also called the pineal body or epiphysis cerebri, is a small cone-shaped structure that extends posteriorly from the third ventricle of the brain. The pituitary gland or hypophysis is a small gland about 1 centimeter in diameter or the size of a pea. It is nearly surrounded by bone as it rests in the sella turcica, a depression in the sphenoid bone. The gland is connected to the hypothalamus of the brain by a slender stalk called the infundibulum.

Pituitary gland: An important gland in the body often referred to as the 'master gland', because it controls several of the other hormone glands.

Plaster: A drug mixture in a paste form which can be applied on the infected body part and stuck on at body temperature.

Pleurisy: Lung inflammation in the lung wall that is accompanied with pain in respiration and coughing.

Pleuritis: Pleurisy is a condition marked by chest pain (pleuritic pain). The pleura is a membrane made up of two thin layers of tissue.

Pneumonia: An acute disease that is marked by the inflammation of lung tissue accompanied by infiltration of alveoli and often bronchioles with white blood cells (such as neutrophils) and fibrinous exudate; characterized by fever, chills, cough, difficulty in breathing, fatigue, chest pain, and reduced lung expansion, and is typically caused by an infectious agent (such as a bacterium, virus, or fungus).

Poisonous plant: A plant or a part of the plant that causes toxicity and can be harmful when used externally or internally.

Poultice: A soft composition, such as bread, bran, or a mucilaginous substance, to be applied to sores, inflamed parts of the body, so as to relieve them, or a moist warm garment or pad applied to the infected body organ or part.

Precancerous lesions: A change in some areas of skin that carries the risk of turning into skin cancer. It is a preliminary stage of cancer.

Prolapsed uterus: A uterus that has moved from its normal position in the abdominal cavity into a different position, usually a lower position.

Pruritus: Itching. It can be associated with a number of disorders, including dry skin, skin disease, pregnancy, and, rarely, cancer.

Psoriasis: A genetically programmed inflammatory disease that primarily affects the skin in about 3% of individuals in the United States. Psoriasis is characterized by skin cells that multiply up to 10 times faster than normal. When these cells reach the surface and die, raised, red plaques covered with white scales form. Psoriasis begins as a small scaling papule. When multiple papules coalesce, they form scaling plaques. These plaques tend to occur in the scalp, elbows, and knees.

Puke: Vomit.

Pulmonary disease: Any abnormal condition of the respiratory system, characterized by coughing, chest pains, dyspnoea, hemoptysis, sputum production, stridor, or adventitious sounds. Pulmonary diseases (such as

emphysema or chronic bronchitis) are characterized by chronic typically irreversible airway obstruction resulting in a slower rate of exhalation (COPD).

Pulmonary hemorrhage: An acute bleeding from the lung, from the upper respiratory tract and the trachea, and the alveoli.

Pulmonary edema: Fluid accumulation in the tissue and air spaces of the lungs. It leads to impaired gas exchange and may cause respiratory failure. It is due to either failure of the left ventricle of the heart to remove blood adequately from the pulmonary circulation (cardiogenic pulmonary edema), or an injury to the lung parenchyma or vasculature of the lung (noncardiogenic pulmonary edema).

Pulmonary troubles: Lung problems.

Purgative: A material that evacuates the abdomen through diarrhoea and at a stronger and faster degree than laxative. Loosens the stool, sometimes vigorously.

Rabies: An acute virus disease of the nervous system of mammals that is caused by a rhabdovirus (species *Rabies virus* of the genus *Lyssavirus*), usually transmitted through the bite of a rabid animal and that is characterized typically by increased salivation, abnormal behaviour, and eventual paralysis and death when untreated.

Recumbency: Lying down; reclining; leaning.

Renal failure: Sudden and often temporary loss of kidney function. Also called acute kidney failure, as opposed to chronic renal failure.

Resolvent: A medicinal substance that reduces inflammation or swelling, serving to dissolve or separate something into its elements.

Rheumatism: Any disorders that appear as pain in joints and muscles.

Rotavirus: An infection that causes diarrhoea. It is the most common cause of diarrhoea in infants and children worldwide.

Rubefacient: Materials leading to local agitation and causing swelling and warm the skin. Produces skin redness from the dilation of the capillaries and an increase in blood circulation.

Ruminant: A type of animal that brings up food from its stomach and chews it again, for example a cow, sheep, or deer; animals which have the ability to regurgitate and have four parts to their stomach are called ruminants.

Salivation: Secretion of saliva from specific glands in the mouth and especially in higher amounts.

Saponin: Any group of plant glycosides that form soap foam in water.

Scabies: A contagious skin disease occurring especially in sheep and cattle and also in humans, caused by the itch mite, *Sarcoptes scabiei*, which burrows under the skin.

Scarfskin: The outermost layer of the skin; epidermis.

Scarlatina: Also called scarlet fever, a disease caused by infection with group A streptococcal bacteria that occurs in a small proportion of people with strep throat.

Sciatica: Severe pain and and weakness in the lowest part of the back in the outer side of the leg and foot and along the longest nerve in the body.

Scrofula: Primary tuberculosis of the lymphatic glands, especially those of the neck.

Scrofulous sores: A form of tuberculosis affecting the lymph nodes, especially of the neck, that is most common in children and is usually spread by unpasteurized milk from infected cows. Also called struma.

Scurvy: A disease resulting from a deficiency in vitamin C, the symptoms of which include spongy gums, loosening of the teeth, and bleeding into the skin and mucous membranes.

Sebaceous glands: A very small organ in the skin that produces sebum.

Secundines: The inner integument of an ovule, afterbirth.

Sedative: An agent used for making a patient drowsy or soothed, but not strong enough to induce sleep.

Sialagogue: Any drug or agent that can stimulate the flow of saliva.

Sinusitis: Inflammation of the lining membrane in any of the hollow areas (sinuses) of the skull around the nose.

Skin whitening: Regarded as being any means of trying to precisely lighten the pigmentation of the skin. The applications to do this are usually topical, but they may also include lasers as well as surgical procedures.

Somatities: Inflammation of the mouth.

Soporific: Drugs that are a class of psychoactives whose primary function is to induce sleep.

Spasmodic: Uncontrolled muscle contractions.

Spastic colon: Irritable bowel syndrome; also a colon affected with spasms or an increase in spontaneous contractions (motility) of muscles in the small and large intestines associated with IBS.

Spinal cord: The cord of nervous tissue that extends from the brain lengthwise along the back in the spinal canal, gives off the pairs of spinal nerves, carries impulses to and from the brain, and serves as a centre for initiating and coordinating many reflex acts.

Sputum: Saliva mixed with mucus coughed up from the respiratory tract.

Staggering: Walking unsteadily or moving shakily forward or shaking deeply, or arranging events so they do not happen all at once. Occurs when drunk.

Stimulant: An agent that excites or quickens the functional activity of the tissues, giving more energy.

Stomach ache: A pain in the stomach.

Stomachic: An agent that strengthens, stimulates or tones the stomach, or a plant that overcome stomach disorders and helps with digestion. Improves stomach function and increases appetite.

Stomatitis: A sore or inflammation inside the mouth. The sore can be on the cheeks, gums, inside of the lips, or on the tongue.

Stranguary: A slow and painful spasmodic discharge of urine drop by drop or a condition caused by blockage or irritation at the base of the bladder, resulting in severe pain and a strong desire to urinate.

Struma: A swelling in the neck due to an enlarged thyroid gland.

Styptic: Contracts tissue to seal injured blood vessels and promotes coagulation.

Sudorific: An agent used to induce perspiration (sweat).

Suspending agent: A liquid in which a solid substance can be held in suspension.

Syphilis: A sexual disease resulting from certain bacteria.

Tannin: A group of complex compounds found in many plants containing acids, phenols and glycosides.

Tetanus: An acute infectious disease characterized by tonic spasm of voluntary muscles especially of the jaw and caused by the specific toxin of a bacterium (*Clostridium tetani*) which is usually introduced through a wound.

Therapeutics: A branch of medical science that deals with methods of disease treatments.

Thorns: A sharp rigid process on a plant; especially one that is a short, indurated, sharp-pointed, and leafless modified stem.

Throat catarrh: Excessive discharge or build-up of mucus in the throat, associated with inflammation of the mucus membrane.

Thrombosis: Presence of blood clots in blood veins or in the heart.

Thrombus, Antithrombotic: A material that prevents blood coagulation.

Thymoma: A rare type of tumor that is the most common tumor type located in the area in the centre of the chest between the lungs (the anterior mediastinum).

Thyroid cancer cells: Cancer of the gland in front of the neck that normally produces the thyroid hormone which is important for the normal regulation of the metabolism of the body. There are 4 major types of thyroid cancer – papillary, follicular, medullary, and anaplastic.

Tincture: A medical extract in liquid of alcohol or alcohol and water. An herbal tincture is a liquid extraction of plant compounds, typically with an ethanol percentage of at least 25–60%.

Tinnitus: A sensation of noise (a ringing or roaring) that is caused by a bodily condition.

Tonic: A medicine that strengthens and invigorates, and hence restores normal tone to tissues or stimulates the appetite.

Tonsillitis: Inflammation of one or both tonsils, typically as a result of infection by a virus or bacteria.

Toxic: Toxic material or a material that causes toxicity.

Tranquillizer: A material or a plant that contains substances that overcome ailments, sedate the nerves, and remove fatigue.

Tremor: Shaking, non-violent trembling, and shivering.

Turpentine: Also called spirit of turpentine, oil of turpentine, and wood turpentine. It is a fluid obtained by the distillation of resin obtained from trees.

Tympanitis: Inflammation of the middle or inner ear, or the eardrum.

Urinary calculi: A stone in the urinary tract. The word 'calculus' in Latin means 'a pebble.' Pebbles were once used for counting, from which came the mathematical field of calculus. A urinary calculus is a pebble in the urinary system.

Varicose veins: The case where the surface veins in the legs are extended, swollen, wrinkled and tortuous.

Vascular disorders: Problems with arteries and veins. Arteries are pipes that bring oxygen-rich blood from the heart to the fingers. Veins are pipes that return the used blood back to the heart and lungs. At the wrist, the radial and ulnar arteries bring blood into the hand. These arteries connect into two arches that branch out to supply blood to each of the fingers.

Vasoconstrictor: Materials that constrict blood vessels and thus reduce the blood flow and raise blood pressure.

Vasodilator: Materials that stretch/dilate the blood veins and widen them and thus increase blood flow and reduce blood pressure.

Venereal disease: A disease that is contracted and transmitted by sexual contact, caused by microorganisms that survive on the skin or mucus membranes, or that are transmitted via semen, vaginal secretions, or blood during intercourse.

Vermifuge: Expels worms.

Vesicant: An agent (such as a chemical weapon) that induces blistering or a substance that causes tissue blistering. A term often used in connection with large-scale chemical burns but may also include naturally occurring substances in plants.

Vitamins: A group of different important materials that are essential in very small quantities for growth, health and development; they cannot be produced by the body but are found in nature in some plants and in food of animal origin.

Wart: A horny projection on the skin, usually on the extremities, produced by a proliferation of the skin papillae and caused by any of the numerous human papillomaviruses.

Wilson's disease: A hereditary disease that is characterized by an excessive accumulation of copper in the body (as in the liver or brain).

Wound healing: A difficult and slow process, so an adequate treatment and optimized follow up are of the highest importance.

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